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### VOLUME III

### MINING CONGRESS JOURNAL

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# THE MINING CONGRESS JOURNAL

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GEO. H. CROSBY

Duluth mining man recently elected a director of the  
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# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## BUSINESS COMBINATIONS UNDER FEDERAL SUPERVISION

The United States Chamber of Commerce has submitted to its constituent bodies a report of a special committee on combination as related to natural resources. This committee consisted of W. L. Saunders, New York; Wm. B. Clark, Baltimore; John H. Fahey, Boston; Chas. R. Van Hise, Madison, and Chas. S. Keith, Kansas City, and the proposition as submitted is as follows:

"The committee recommends that there should be remedial legislation to permit cooperative agreements under Federal supervision in those industries which involve primary natural resources, on condition that the agreements in fact tend to conserve the resources, to lessen accidents, and to promote the public interest."

The committee report reviews the history of the development of natural resources, calls attention to the loss of life and limb by industrial accidents points out the fact that competition which increases waste of natural resources and heightens danger to life and limb among operatives has grown in breadth and intensity, and calls attention to the peculiar conditions existing in the production of coal and the great waste now prevailing. The recommendation of the committee is in full accord with the views of the American Mining Congress, looking to cooperative agreements under Federal supervision. It is believed that the commercial bodies of the country who vote on these propositions will see the importance of cooperation as a means of bringing the business force of this country to a state of greater efficiency.

We call attention to an excerpt in another column from a recent monograph on industrial efficiency by Dr. Slossen, which presents, as we believe, very clear reasons for the indorsement of the recommendation of the committee of the United States Chamber of Commerce.

## COMPULSORY INVESTIGATION OF INDUSTRIAL DISPUTES

Much of the criticism against President Wilson, because of his activity in bringing about the passage of the Adamson eight-hour bill, will be turned to praise if the same forceful measures shall be exerted in behalf of a passage of a compulsory investigation act. It will be recalled that President Wilson's program called for "An amendment of the existing federal statute which provides for the mediation conciliation and arbitration of such controversies as the present by adding to it a provision that, in case the methods of accommodation now provided for should fail, a full public investigation of the merits of every such dispute shall be instituted and completed before a strike or lockout may lawfully be attempted."

This program included:

An enlargement and administrative reorganization of the Interstate Commerce Commission; the establishment of an eight-hour day as a legal basis of work and wages; the appointment of a committee to report on the results of the operation of the eight-hour law; approval of the consideration by the Interstate Commerce Commission of an increase of freight rates, to meet the additional expense entailed by the enforcement of the eight-hour law.

The eight-hour law was enacted and its counterpart, the investigation act, now awaits action of Congress.

The first part of this program received the approval of labor leaders and was passed under conditions which were condemned by many upon principle and by others because the bill was forced through Congress to prevent a railroad strike which was threatened unless the bill should be immediately passed. The second part of the program does not meet the approval of labor leaders and it remains to be seen whether organized labor is the dominant political factor in the Government or whether Congress is ready to demonstrate the opposite by putting into effect President Wilson's suggestion "That the concerted action of powerful bodies of men shall not be permitted to stop the industrial processes of the nation." The principal involved in this suggestion is not new nor experimental. It has been exercised in other countries with great benefit. The State of Colorado enacted a similar law which has been in operation for two years with very beneficial results. A very complete description of the Colorado law and of its workings will be found in the proceedings of the nineteenth annual convention of the American Mining Congress in a paper by Mr. Wayne C. Williams, a member of the Colorado Industrial Commission. We urge our readers to give critical study to this address.

THE MINING CONGRESS JOURNAL believes in compulsory arbitration of every industrial dispute in which the rights of the public are greater than the rights of the disputing parties.

Surely some provision should be made by which disputes vitally affecting the public interest shall be investigated in advance of the inevitable bad results, in order that the public, the final arbiter, shall be in position to exercise its power intelligently.

### AN ANOMALOUS SITUATION

One of the most important, if not the most important, of public questions is that involved in what is known as the public land question of the West. This subject is now and for years has been

under consideration by Congress. At one time the West was represented by those whose interest was that of the public wholly. A great basic principle is involved—is the Government of the United States to forsake the policy under which the pioneer was rewarded for the risks and hardships which he assumed, whether the States are to have the right to tax the property within their borders, whether the citizens of those States are to be tenants of the Federal Government or to be free holders, whether western development is to be controlled by the pioneers upon the ground who understand conditions or whether this development is to be controlled by a Congress 2,000 miles away and so unwieldy that nothing short of a most terrible public emergency could secure its action upon any point within a space of two years, or, worse still, whether that control shall be placed in the hands of Bureaus at Washington, where the details of executive management are controlled by low salaried clerks with absolutely no knowledge of western conditions. These are some of the problems involved in the discussion; however, these questions seem to have been largely lost sight of. The present situation would indicate that the only questions involved are the rights of individual investors, whose property is threatened by the proposed legislation. So far as the public is concerned, the great fundamental questions involved are being neglected. A few of the western Senators and Representatives have been and are making a valiant fight against the radical changes proposed, but these men are not receiving the support and assistance from the West which so vital a question should command. The interests of the West are being largely left to the efforts of those who are within the "domain of reprisal."

### NATIONAL EFFICIENCY

Monograph number two of the National Institute of Efficiency has been issued and is well worth a careful study. Its author is Dr. Edwin E. Slosson of the editorial staff of the *Independent*. The subject of "Trade Expansion and National Independence" is treated compre-



hensively and it is pointed out that the importance of economic independence is the chief lesson of the great war.

This monograph is an able argument in support of the plan urged by Dr. W. R. Whitney of the Research Department of the General Electric Company at the Chicago convention of the American Mining Congress looking to appropriations for scientific research in industrial fields.

Dr. Slosson calls attention to Dr. Friedrich Naumann's *Mitteleuropa* in which Germany's unique power in the industrial world is credited mainly to—

1. An incorruptible and efficient body of administrators;

2. A well organized and disciplined body of workmen;

3. An unequalled body of scientists and technicians;

4. An exceptionally able group of financiers and organizers of large scale industry.

Dr. Slosson points out the radical differences between German methods and our own in the following language:

"The American Government intervenes in business to prevent combinations and restore competition.

"The German Government intervenes to prevent competition and to restore combination. Even the labor men and socialists of Germany favor the formation of syndicates because it makes the conditions of employment more stable and increases wages and number of men employed through expanding the industry. The industries which have made most progress in Germany have been those most completely syndicated, like the steel, potash, dyes and glass business. But the form of combination favored in Germany is not the American trust, but the cartel, which is essentially a marketing syndicate, regulating prices, output and share of production. The cartel does not destroy or absorb small producers, but, on the contrary, enables them to survive by protecting them from the competition of the big ones.

In America protective duties are attacked on the ground that they favor the formation of trusts. In Germany they are advocated for that same reason. Our Government prohibits railroad rebates in behalf of special industries. The German Government grants rebates or manipulates freight rates on the State railroads to help industries that are endangered or are ambitious of foreign expansion. In this country it is regarded as an unanswerable argument against the tariff if it is discovered that a protected article is sold cheaper abroad. In Germany duties are imposed with the express purpose of enabling the manufacturer to sell

cheaper abroad. In this country it is considered an absurdity, if not a crime, to maintain a duty on a product, especially agricultural, which can never hope to be produced as cheaply as it can be imported. In Germany it is regarded as the duty of the Government to permanently protect an industry like agriculture, which is necessary for the economic independence of the State. In America it is thought desirable that the different branches of an industry be kept in separate hands. In Germany it is thought desirable that each industry should control all its sources of raw material and turn out a completely finished product; for instance, that a steel plant should own its own iron mines, coal mines, railroads and ships. Our cities are ruled strictly and in detail by the States; the German cities are self-managed and branch out into many enterprises considered improper in America. In Germany office-holding is a life job for which a man receives professional training; we regard administration as an occupation for amateurs and believe in rotation in office.

"Americans think it wrong for any department of the Government to make a profit. The German Empire gets over 30 per cent of its income from its remunerative enterprises, and the annual gross receipts of Empire and States from such sources are \$700,000,000. In America the combination of railroads and steamship lines is forbidden; in Germany it is encouraged. The German Government is the partner and promoter of German business; the American Government aims rather to regulate, to correct and to chastise. In short, the German strives for organization; the American for disorganization. The German ideal is cooperation; the American is competition. The Germans believe that competition is a sort of industrial warfare, and as such should give place to a permanent peace."

If the temper of our recent convention at Chicago is at all indicative of the present mood of American business men it would seem to promise a return to the cooperative spirit as a real factor in our future industrial life.

### A SEVEN-HOUR DAY

During the despondent days of the bituminous coal mining industry, many plans were considered for the betterment of conditions. Miners employed less than two hundred days each year required a much higher wage than if employment could be made continuous. What seemed to be the best plan considered was that through cooperative agreements, among the operators and miners, conditions could be created under which the miners should have more continuous employment and that those workmen thus relieved from service might



devote their energies to the production of articles needed by the miners, particularly foodstuffs, in order that the miner's living expenses might be reduced by purchasing his supplies at a less price; that through this plan the miner might during the year earn a surplus above the actual cost of living and the coal consuming public either receive its coal at a less price or through the saving thus effected leave to the operator a reasonable profit upon his operations.

Pres. John P. White, of the U. M. W. of A., speaking from the miners' standpoint and apparently without regard to the public interest is advocating a seven-hour day as the best solution of this problem.

There are approximately 550,000 men engaged in the bituminous coal mining industries in the United States. Upon a basis of \$2.00 per day, the proposed reduction in hours would mean an additional burden upon the coal consuming public of \$28,600,000.00 annually. The greater part of this burden would rest upon productive industries in other lines.

The result would be that the wage earners who furnish the supplies to these miners would be obliged to charge a higher price in order to enable them to earn the additional \$28,000,000 burden.

It would seem to be a much more effective solution of this problem if we could put the 60,000 men into some other productive line of industry, for instance, the raising of farm produce, and, through the increased competition in the produce market, enable these remaining miners to live more cheaply.

THE MINING CONGRESS JOURNAL does not believe that any plan can be effective except it makes for greater efficiency.

Let us provide continuous employment for the men who are necessarily engaged in mining, furnish them with that equipment which will enable them to produce coal most cheaply and utilize the surplus labor in an effort to cheapen the cost of living.

Only through the highest efficiency can we hope to continuously provide an adequate wage to these workmen; namely, a wage which will permit him to support his family as befits an American workman, to educate his children and to pro-

vide a competency for his old age during the working period of his life.

No plan can be made permanently effective which undertakes to relieve the burdens of one part of society by placing those burdens upon another part. A recent statement by President Wilson is clearly to the point. The statement is as follows:

"We must cooperate in the whole field of business; the Government with the merchant, the merchant with his employes, the whole body of producers with the whole body of consumers, to see that the right things are produced in the right volume and find the right purchasers at the right place and that all, working together, will realize that nothing can be for the common benefit which is not for the individual benefit."

## WATER POWER DEVELOPMENT

The recent embargo by the Canadian Government against the transmission to plants operating in the United States of electrical power development upon the Canadian side of Niagara Falls, furnishes a peculiar reason for a protest against the administration policies through which water power development in the western States is being prevented.

The appeal to the United States Senate that legislation shall be enacted permitting the use of a larger part of the water from the Niagara River in the development of power upon the American side of the Falls comes from many parts of the country. From Los Angeles, Cal., comes the appeal from various manufacturers and from the mining interests to the effect that this shortage of power at Niagara Falls is curtailing their supply of grinding materials used in the manufacturing plants and of cyanide used in the mining industry. This shortage of power would have been supplied many times over before this time by each of several water power producing companies in the western States had the policy of the Federal Government tended to encourage development instead of preventing development and of attacking the foundation upon which investments already made were based.

As an illustration of this we call atten-

tion to the case of *The United States of America vs. The Colorado Power Co.* Equity case number 5853 in the District Court of the United States for the district of Colorado.

Development on this project began fifteen years ago.

The rights of the promoters of this enterprise were approved by the proper officers of the Government and several millions of dollars have been spent in construction. In 1909, seven years after the beginning of this work the Federal administration began its attack upon the enterprise and after years of contest the case was finally brought before the court. The case is still pending, the securities of the company have been and are still in jeopardy, many good faith investors have lost a large part of their investment and during all these years hydro-electric power of enormous value has been and is being continually wasted in the name of conservation. A chronological history of the material events in this case will be both interesting and instructive.

January 7, 1902, date of commencement of construction, as fixed by decree of District Court of Eagle County;

June 2, 1902, Deremer filed application for United States rights of way;

July 21, 1902, the Grand River Power and Transmission Company filed application for United States rights of way;

August 20, 1903, Deremer's right of way maps approved by the department;

November 19, 1905, The Grand River Power and Transmission Company's right of way maps approved by the department;

April 26, 1905, prior to this date the defendant's predecessors had expended approximately \$20,000 in surveys and construction work;

April 26, 1905, defendant's site withdrawn by Secretary of the Interior for Holy Cross Forest Reserve;

August 25, 1905, original proclamation of the Holy Cross Forest Reserve;

December 26, 1906, defendant acquired Deremer's rights and the rights of The Grand River Power & Transmission Company, through mesne conveyances;

December, 1906, defendant commenced expenditures at Shoshone;

March 1, 1907, the defendant's expenditures at Shoshone prior to this date, \$61,158.56;

March 1, 1907, the President's proclamation purporting to include the defendant's site in Holy Cross Forest Reserve;

July 16, 1907, the Secretary of the Interior assented to the use by the defendant of the Deremer and The Grand River Power and Transmission Company's rights of way;

July 1, 1908, at this time there had been invested in the construction of the Shoshone project \$980,297;

March 1, 1909, the defendant's expenditures at Shoshone, prior to this date, \$2,297,091.94, and a further investment of approximately \$5,000,000 made in other construction, the use of which is dependent on the Shoshone development;

March 2, 1909, attempted revocation of the Deremer and The Grand River Power and Transmission Co.'s rights of way by Secretaries of the Interior and of Agriculture, to take effect July 1, 1909;

June, 6 1909, Shoshone works completed and in operation;

July 26, 1909, Secretary of Agriculture attempted a further revocation of Deremer and The Grand River Power and Transmission Co.'s permits.

This is but one of many cases of this kind in which money already invested by those who believed that their Government would deal justly with its citizens has been jeopardized.

The writer was recently told by a gentleman who has large opportunity for knowing the truth that at this time he knows of over \$300,000,000 ready to make investments in the development of western water power enterprises could fair treatment be assured. The benefit to the Western States and to the nation, if power from a \$300,000,000 investment could be applied to western productive manufacturing and mining enterprises, can hardly be estimated.

Fundamentally the difficulty arises from the fact that the Federal Government is



claiming the right to control these lands as a sovereign and not as a proprietor.

Congress many years ago recognizing the fact that the Government cannot be made a party defendant in legal proceedings enacted laws permitting the use of the public domain for public utilities. The power was given the Interior Department to supervise filings of this character in order that conflicting rights of way should be harmonized and that no property should be unduly burdened with easements of this character. At the time the final decision of these matters was very properly given to the Interior Department, it became the duty of the department to decide only between rival claimants for the same rights of way. When, however, the Government became an interested party seeking to retain its ownership and through a leasing system receive royalties therefrom the Government should not be permitted to render final decision. Justice cannot be assured or even hoped for when one of the parties to a contest is given the right of final decision.

If Congress is desirous of conserving the water power resources of the United States it will immediately enact legislation through which the water powers of the West may be developed. If Congress believes that our Government shall be just it will insist that the rights of investment made in good faith shall be fairly and equitably construed.

## PROCEEDINGS 1916 CONVENTION

The proceedings of the nineteenth annual convention of the American Mining Congress will be ready for delivery probably by January 15, and will present a most notable collection of economic discussions by leaders in the various lines. The volume will consist of from 600 to 800 pages and include the following papers:

- Arnold, Ralph.—The World's Oil Supply.
- Ball, Max W.—Adequate Acreage and Oil Conservation.
- Bishop, Roy A.—Remedial Legislation for Benefit of Oil Companies.
- Crews, Ralph.—Cooperation in the Marketing of Coal.

Cushing, George H.—What Becomes of the Benefits of Production Efficiency.

Day, David T.—The Chemical Possibilities of Petroleum.

Dering, C. L.—World Trade Conditions of the Future.

Drinker, Dr. Henry S.—Position of Engineers Towards the Question of Water Power Development in the West.

Fay, Albert H.—The Record of Mine Safety Work.

Gamble, Judge J. G.—Authority of States to Tax Mining Property on Indian Lands.

Gann, Thomas M.—Responsibilities and Duties of the Operator in Mine Safety Work.

Garcia, J. A.—Uniform Legislation as Affecting Mining Engineering.

Gillett, Hon. James N.—The Relation of the Federal Government to Western Oil Production.

Harlin, Robert H.—Is Uniform Coal Mining Legislation Advisable?

Hurley, Hon. Edward N.—The Federal Trade Commission and the Mining Industry.

James, Garrett B.—Oil Storage.

Kirby, E. B.—Report of Committee on Revision of Mineral Land Laws.

Lewis, T. L.—Responsibilities and Duties of the Miner in Mine Safety Work.

Lyon, Dorsey A., and Ralston, O. C.—Present Status of the Oil Flotation Process.

Manning, Van H.—What Can Uniform Mining Legislation Hope to Accomplish?

Manning, Van H.—Federal Aid to Mining Efficiency.

Moorehead, A. J.—Commission Plan of Preparing Mining Legislation in the State of Illinois.

McDowell, J. C.—Geology In Its Relation to the Oil Industry.

McNair, Dr. F. W.—Responsibilities and Duties of the Public in Mine Safety Work.

Parker, E. W.—Cooperation, Conservation and Competition in Coal.

Paul, James W.—Desirable Points of Similarity in Mining Legislation.

Paul, James W.—The Duties of Mine Inspectors.

Pope, Col. George.—Organized Capital and Organized Labor and Their Relation to Efficiency, Conservation, Better Wages, Better Living Conditions, Lawlessness, Strike Disorders and Industrial Freedom.

Potter, Charles F.—Conservation in Mining Through Water Power Development.

Purdue, A. H.—The State Geologist and Conservation.

Rittman, Dr. Walter F.—Dyes and Explosives from Coal and Petroleum.

Roosevelt, Hon. Franklin D.—Naval Oil Reserves as a Necessity to National Preparedness.

Ropiequet, R. W.—Coal Freight Rates, Relatively and Uniformly.

Ropiequet, R. W.—Difficulties I Have Met In Coal Litigation.

Ruhl, Otto.—A Tariff for Revenue as Related to a Compensating Duty on Lead and Zinc Ores.

Scholz, Carl.—Cooperation the Basis of Safety, Efficiency and Conservation.

Scollard, Michael.—The Commission Plan of Preparing Mining Legislation in Indiana.

Sharpless, F. P.—Revision of U. S. Land Laws as They Affect Mineral Location.

Short, Hon. Frank H.—Conservation: Its Purpose, and Its Effect.

Short, Hon. Frank H.—The Federal Government in Its Relation to the Public Lands of the West.

Siebenthal, C. E.—Lead and Zinc Resources of the United States.

Smith, George Otis and C. E. Leshner.—The Cost of Coal.

Stander, H. J.—Oil Flotation.

Stock, Dr. H. H.—State Mine Rescue Station.

Taylor, S. A.—Advisability of Preparing Mining Legislation Through Commissions.

Taylor, S. A.—Committee on Uniform Cost Accounting.

Thompson, J. W.—Methods for Obtaining a Uniform Mining Law.

Titus, Louis.—The Federal Government and the California Oil Claimants.

Traer, Glenn W.—The Sherman Law and Its Relation to Mining.

Tupper, C. A.—Mining Industry; Its Magnitude.

Van Wagenen, Theo. F.—The Prospector and the Mining Law.

Welch, R. L.—Practical Phases of the Standard Oil Dissolution and the Necessity of Combinations Among Independent Producers to Meet Unfair Competition.

White, I. C.—Anti-clinal Theory.

Whitney, Dr. Willis R.—Practical Significance of Pure Research.

Williams, Wayne C.—Compulsory Investigation of Industrial Disputes Under the Colorado Industrial Commission.

Willis, Prof. C. F.—The Value of State Mining Organizations.

Many of these papers are classics upon the subjects considered and taken in connection with the discussions which followed their presentation bring out the best thought of the present day.

The proceedings will be sent to all members of the Mining Congress, and to members of the U. S. Senate and House of Representatives.

## MINERALS SEPARATION

### VICTORY WELL DESERVED

Mining engineers and metallurgists in Washington are of the opinion that there was not the slightest miscarriage of justice in the decision of the Supreme Court in the Minerals Separation Case. From such opinion from the mining camps of the country as has been reflected in the Capital, there seems to be

a general concurrence in the decision reached by the highest tribunal. This sentiment, as well as the opinion of the court, is incontrovertible evidence that justice and fair play are well developed American attributes. The decision of this case in favor of the two English syndicates that were plaintiffs means that millions in royalties will go to a foreign country.

The remarkably clear setting forth of the case by Mr. Justice Clark in the opinion, which is reproduced in full on another page, is making the fundamental questions involved well understood. The royalties will be paid ungrudgingly and mine operators throughout the country are glad to see some measure of confidence restored among inventors. The difficulty of those inclined toward invention of securing the fruits of their work and their genius has been retarding this class of endeavor.

We hope the attitude of the Minerals Separation, Ltd., and Minerals Separation, American Syndicate, will be cordial and generous toward the operators of mines. They will gain by such a policy and so will the operators.

## GEORGE S. RICE SERVES

### CANADIAN GOVERNMENT

George S. Rice, chief mining engineer of the Bureau of Mines, has reflected credit on himself, the Bureau with which he is connected, and on his country by the very excellent work he has just completed at the request of the Canadian Government. He has just returned from an examination of the coal mines in the Crow's Nest field of British Columbia. During a short visit he was able to grasp a situation which has been baffling the best of engineers. While his report is hardly begun he was able to hold out definite hope to the operators of what are perhaps the most gaseous mines in the world. That his report will be of material aid toward the continued operation of these much needed sources of coal supply, under conditions offering a minimum of life risk, is a foreformed conclusion we do not hesitate to venture.



## GEOLOGISTS ARE GIVEN WHOLESOME COUNSEL

Good advice is given geologists by George Otis Smith when he urges them not to accept professional work in the service of one of the parties to litigation.

When one geologist of reputation appears in court and attempts by his testimony to offset the testimony of another geologist, it frequently besmirches his profession.

There is no cleaner, higher-planned profession than that of the geologist. Each member of the profession should do his part and use his influence to avoid any lowering of the standard.

Concerted action on the part of all geologists in an effort to procure legislation looking to the retention of expert witnesses by the court should be undertaken.

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### Postal Statement

Complying with the postal law of August 24, 1912, THE MINING CONGRESS JOURNAL submits the following information to its readers: THE JOURNAL is published monthly at 744 Munsey Building, Washington, D. C. Editor, J. F. Callbreath, business manager, J. F. Callbreath; publisher, The American Mining Congress; owners, The American Mining Congress. There are no stockholders or bondholders. (Signed) J. F. Callbreath, editor. Sworn to and subscribed before me this 3d day of October, 1916, L. D. Keller, Notary Public.

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### FUND BEING COLLECTED FOR SAFETY ASSOCIATION

The Joseph A. Holmes Safety Association is engaged in an intensive campaign, looking to the collection of funds to carry out the purposes for which it was organized. This association which is a form of memorial to the late Dr. Holmes, is intended to promote safety in the mineral industry. One of its principal activities will be the recognition of notable efforts toward greater safety in mining operations. The funds for this purpose are being collected by popular subscription among those directly interested in the industry.

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### OUR GREAT GRANDCHILDREN WON'T WANT TO PAY THE INTEREST

"The consumer of the next century simply cannot afford to have private capitalists invest today in coal land for their great grandchildren to lease." (Extract from the address of Geo. Otis Smith at the Mining Congress Convention.)

## FATALITIES IN MINES COMPARE FAVORABLY WITH THOSE OVERTAKING MEN IN RAILROAD TRAIN SERVICE

That fatalities occur with greater frequency among trainmen on railroads than they do in the bituminous mines of Pennsylvania is a striking fact brought out by Albert H. Fay, statistician of the Bureau of Mines, in a report recently published. When it is considered that the major portion of the work of trainmen is in daylight; and wholly on the surface, this is an indication that the hazards of coal mining are not as great as is popularly supposed. It is true that the fatality rate in the anthracite mines is higher than the fatality rate among trainmen, but this is due to the well known fact that the veins in the anthracite fields pitch at sharp angles, which greatly increases the danger to which the miner is subjected.

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### DR. CHAS. E. VAN BARNEVELD GETS TUCSON APPOINTMENT

Dr. Charles E. Van Barneveld, one of the best known metallurgists in the Southwest, has been appointed superintendent of the federal mining experiment station at Tucson, Ariz. Dr. Van Barneveld is best known, perhaps, as the former director of the Mining Department of the University of Minnesota; but, his specialty for many years has been the study of mining and metallurgical problems in the southwestern portion of the United States. Dr. Van Barneveld had charge of mining at the University of Minnesota for thirteen years. Prior to this time, however, he was engaged for five years in mining operations in the Southwest and in Mexico. During his long period of service at the Minnesota University he spent several months each year in the southwestern states, making personal studies of its mining problems.

When it became necessary to fill the important place at the head of the Department of Mines and Metallurgy of the Panama-Pacific Exposition, Dr. Van Barneveld was so preeminently the man for the place that he was chosen without dissension by the management of the exposition. For a year after the close of the exposition he served as Professor of Mining at the University of California.

Dr. Van Barneveld was in Washington last month, familiarizing himself with the manner in which the Bureau of Mines conducts its work. He also has visited the stations and branches of the Bureau of Mines with the same object in view.

The chief clerk of the Tucson Station will be H. E. Meyer.

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### Bent Elected President

At a recent meeting of the Illinois Coal Operators' Association, E. T. Bent, of Chicago, was elected president, Rice Miller, vice-president, and F. C. Honnold, secretary and treasurer.

# FIVE WESTERN STATES PAY OVER \$100,000,000 IN MINE DIVIDENDS

Arizona, Utah, Montana, Nevada and Idaho Mines Divide Enormous Profits of the  
Year Just Closed—Output of Copper Reaches Undreamed-of  
Total of 2,000,000,000 Pounds

Ten mines in Arizona paid \$34,000,000 in dividends during the past year. Adding Utah, Montana, Nevada and Idaho dividends to those of Arizona we have a total of over \$100,000,000 in dividends paid out of the mines of these five western States in a single year.

These are some of the impressive facts brought out by the report of the Geological Survey to Secretary Lane just made. "Never before," said Mr. Lane, "has so large a draft been made on the natural resources of our country as during this year, and never before have the metals been extracted from these ores with less waste or utilized to better advantage in advancing the general prosperity of the country. Even as written in the plain figures of 1916 production the wonderful record of our mines sets forth a degree of national industrial independence only hoped for a few years ago.

"Again copper stands out as the best illustration of how American mines can meet a world demand. The output of nearly two billion pounds of the red metal is double that of ten years ago and its value is twice that of the copper produced in 1915. Add to this the facts that in value copper now contends with iron for first place among the metals and that together the amount of these two metals produced last year had a value of more than one billion dollars, and we have a measure of what this country can contribute in useful metals.

"The output of zinc from domestic ores increased last year 95,000 tons, which makes a new record for that metal, the total value of spelter from United States ore being \$135,000,000. Lead also shows a large increase, the \$75,000,000 output being a gain of more than 50 per cent.

"With all this activity in metal production the coal mines have had to meet a heavy demand, so that the bituminous coal output has now passed the half-million ton mark, an increase of 12½ per cent over the previous year. Coke production increased 30 per cent and it is gratifying to note that by-product coke made the largest gain, which means a corresponding gain in benzol and other valuable by-products.

"Again the oil wells have given a new record for petroleum yield, the estimate of marketed production of crude petroleum for 1916 being 292,000,000 barrels, or 11,000,000 barrels more than in 1915.

"Another mineral product which furnishes an index to business conditions is cement,

the 1916 production of which is estimated to be 5,000,000 barrels in excess of the output of the previous year, while the shipments were even greater, aggregating 94,500,000 barrels, with the outlook reported as good for the new year.

"The reports received from the Survey's western offices contain most significant mining records. Every western State shows a large increase in yield of metals, Arizona leading with a gain of \$100,000,000 over last year, while Utah and Montana together report another \$100,000,000 gain. Alaska also had its best year, contributing a total value of more than \$50,000,000 this year, or over 50 per cent in excess of any previous year.

"These advance statements not only show that 1916 marks a new advance for the mineral industry of the country, but this remarkable increase promises to be approximately 25 per cent over the 1915 production, so that we may expect the final figures to show a total of three billion dollars."

## EXPECT GREATLY INCREASED ZINC OUTPUT IN 1917

At both the Mammoth and Bully Hill mines in California, processes have been developed for reducing zinc ores by leaching and electrolytic precipitation of the zinc. These processes will also be applicable to the bag-house dust, and will doubtless operate to increase greatly the output of zinc by 1917.—(Extract from the Mining Congress Convention paper of C. E. Siebenthal.)

## RECORD BREAKER FOR COKE

The coke output of the United States broke all records in 1916. More than 35,000,000 tons of beehive coke was manufactured, an increase of over 27 per cent compared with 1915, and 500,000 tons more than the record-breaking total in 1910. By-product coke amounted to 19,200,000 tons, an increase of more than 5,000,000 tons, or 36 per cent compared with 1915. The total coke production, according to estimates prepared by C. E. Leshner, of the United States Geological Survey, Department of the Interior, was 54,300,000 tons, an increase over 1915 of 12,700,000 tons, or 30 per cent, and over 1913 of 8,000,000 tons.



# COAL TRADE ASSOCIATIONS PLAYING IMPORTANT PART IN THE INDUSTRY

**Increase in Efficiency and in Numbers of These Organizations Is One of the Features of the Year Just Closed—Public and Operators Are Being Benefited by Their Work**

One of the most striking developments in the coal business during 1916 has been the development of the coal trade associations, according to C. E. Leshner, coal statistician of the U. S. Geological Survey, who has just returned from an extended trip. These associations during the current year have reached a higher degree of efficiency than ever before and a large number of new associations have been formed. In Mr. Leshner's opinion many more associations of this type can be formed. He thinks each competitive district would benefit by having an organization of this type.

In the collection of trade data and the prompt compilation of statistics, these associations are giving the operators facts on which to base their business activities which plan is taking the place of the former method of basing them on hearsay and other indefinite information. The quality of the work that is being done and the progressive policies, which are characteristic of these associations, are doing much to benefit the operators, but by increasing the stability of the industry, Mr. Leshner believes that the public is being benefitted importantly.

Much of the success of these associations is due to the men who are in direct charge of them. Men of the type of Dr. F. C. Honnold, C. G. Hall, T. L. Lewis, W. D. McKinney and W. H. Groverman are doing much to make these associations of practical every-day value. The work being done by the Franklin County Coal Operators' Association, The Northwest Coal Dock Operators' Association and the Indiana Coal Trade Bureau is typical of the high type of endeavor, Mr. Leshner believes.

Mr. Leshner visited Cincinnati, Columbus, Chicago, Minneapolis, Duluth, Cheyenne, Denver, Colorado Springs, Kansas City, St. Louis, Terre Haute and Cleveland.

## **OKLAHOMA ZINC PRODUCTION INCREASES DUE TO NEW MINES**

There will be a larger production during 1916 from the southwestern part of the Joplin region, which lies in Oklahoma, where several very rich mines have been recently opened. These mines are in the northward extension of the Miami district, in which development has progressed northward to the Kansas line. Just at present the most actively prospected section in the Joplin district is an area in Kansas  $2\frac{1}{2}$  miles wide and reaching from Baxter Springs 8 miles westward, adjacent to the Oklahoma State line.—(Extract from the Mining Congress Convention paper of C. E. Siebenthal.)

## **KEEN INTEREST IN FIRST AID WORK IN ANTHRACITE FIELD**

The wide interest shown in first-aid work in the anthracite mines by officials and employees alike has been forcibly demonstrated through the contests conducted by the operating companies during the late summer and fall. The efficient practical work done by these volunteer "doctors" in times of stress has won general recognition. Equally to their credit is the highly technical skill exhibited on these field days under the critical scrutiny of eminent surgeons. Although these competitions had provided problems involving the treatment of the most serious classes of accidents, the men exhibited the highest efficiency. No less than four contesting teams had the good fortune to make perfect records, being each rated at 100 per cent. Three more first honors went to teams representing that many of the large companies upon the mark of 99 1/3 per cent. The thoroughness with which the contestants worked is further indicated, in one competition in which ten teams were entered, and in which the lowest rating was 96.7.

The popularity of these meets was responsible for an aggregate attendance of more than 7,000 persons, among whom were many distinguished guests. There were 132 teams represented and there was a total of 743 men in competition. The winning teams, apart from the joy of carrying off the coveted honors, were accorded valuable prizes. There were six gold cups awarded and some of the fortunate contestants received in addition money prizes, gold watches, jewelled stick pins, gold and bronze medals, and some of the men were treated to special vacation trips. Besides these contests most of the companies had arranged athletic programs and valuable prizes went to the winners in the various events. Bands accompanied most of the excursionists to the fields, dinners were served to all in attendance and dancing was provided as a relaxation after the more serious program had been completed.

## **Tennessee Will Increase Zinc Output**

The zinc output of Tennessee during 1916 will be larger than 1915, because the Mascot mines are increasing in production and because a new mill equipped with flotation machines has been operating all the year at the New Prospect mine, in the old Lead Mine Bend district.—(Extract from the Mining Congress Convention paper of C. E. Siebenthal.)



# MINERALS SEPARATION, LTD., WINS CASE BEFORE THE SUPREME COURT

Opinion Involving Millions in Royalties is Handed Down by Nation's Highest Tribunal—Patents of English Company Held To Be Valid in Their Important Claims

While the Supreme Court of the United States decided the case of Minerals Separation, Limited, and Minerals Separation American Syndicate, Limited, vs. James M. Hyde, in favor of the English companies it is a generally expressed belief here that the litigation has resulted in benefit to the mining industry in the United States. Minerals Separation began operating in this country convinced of the fact it could absolutely dictate any terms it saw fit to those in need of its process. Its business methods were of a sort which stirred up intense antagonism. The English company was accused of being arbitrary to an extreme in many of the contracts which it sought to make.

That the unbending business policy of this company is responsible for much of the progress which has been made in the United States in leaching, is asserted by prominent metallurgists here. It doubtless stimulated experimentation in other forms of treatment for ores. It is doubtful if the leaching process would have received much consideration at Anaconda if it had not been for the arbitrary attitude of Minerals Separation.

Threatened by litigation, which for a time, at least, promised to undermine all of the claims of its patent, Minerals Separation adopted a more cordial business policy. From that time on its relations with American mining concerns have been very much more conducive to cooperation. A desire has sprung up recently that the company reap the rewards of its painstaking investigation and development of flotation.

The final decision in the case, which was handed down, December 11, by the Supreme Court, came after the matter had been considered by the District Court and the United States Circuit Court of Appeals in Montana. The District Court returned a verdict very favorable to Minerals Separation. Its ruling, however, was largely set aside by the Court of Appeals. In turn the Supreme Court overruled most of the conclusions of the Court of Appeals but it does not concur in all of the findings of the District Court.

The opinion in this important case was written by Justice Clarke. There was no dissenting opinion. The Supreme Court handled this most complicated case in a highly intelligent manner, according to authorities here, and the opinion is regarded as a very masterly piece of work.

Owing to the widespread interests in the Minerals Separation case the entire text of the opinion is reproduced as follows:

In this suit the complainants, the first named as the owner and the other as general licensee, claim an infringement of United States letters patent No. 835120, issued

on the sixth day of November, 1906, to Henry Livingstone Sulman, Hugh Fitzals Kirkpatrick-Picard and John Ballot. The usual injunction, accounting and damages are prayed for. The District Court sustained the patent as to claims numbered 1, 2, 3, 5, 6, 7, 9, 10, 11 and 12; found that the defendant had infringed each of these claims, and granted the prayer of the petition. The Circuit Court of Appeals for the Ninth Circuit reversed the decree of the District Court and remanded the case with instructions to dismiss the bill. The case is here on writ of certiorari to review that decision.

As stated in the specification, the claimed discovery of the patent in the suit relates "to improvements in the process for the concentration of ores, the object being to separate metalliferous matter from gangue by means of oils, fatty acids, or other substances which have a preferential affinity for such metalliferous matter over gangue."

The answer denies all of the allegations of the bill and avers that in twenty-five designated United States and five British patents the process described in suit was "fully and clearly described and claimed," and it also avers that the claimed discovery was invented, known and used by many persons long prior to the time when the application was made for the patent in suit. Notwithstanding this elaboration of denial counsel for the defendant in the summarized conclusion to their brief rely upon only five of the many patents referred to as showing that the patent in suit was anticipated and is therefore invalid for want of novelty and invention, viz: Everson (1886), Froment (Italy, 1902; Great Britain, 1903), Glagner (1903), Schwartz (applied for April 19, 1905, issued December 19, 1905), and Kirby (applied for October 17, 1903, issued December 18, 1906). And the defendant, a man obviously experienced in the subject, says that, in his opinion, the whole basis of flotation concentration was disclosed in the Everson United States patent No. 348157 and in the Froment British patent.

It is clear that in the prior art, as it is developed in this record, it was well known that oil and oily substances had a selective affinity or attraction for, and would unite mechanically with, the minute particles of metal and metallic compounds found in crushed or powdered ores, but would not so unite with the quartz, or rocky non-metallic material, called "gangue." Haynes British patent (1860), and United States patents, Everson (1885), Robson (1897) and Elmore (1901). It was also well known that this selective property of oils and oily substances was increased when applied to some ores by the addition of a small amount of acid to the ore and water used in process of concentration. United States patents, Everson (1885), Elmore (1901), and Cattermole (1904).

Prior to the date of the patent in suit a number of patents had been granted in this and other countries for processes aiming to make practical use of this property of oil and of oil mixed with acid in the treatment of ores, all of which, speaking broadly, consisted in mixing finely crushed or powdered ore with water and oil, sometimes with acid added, and then in variously treating the mass—"the pulp"—thus formed so as to separate the oil, when it became impregnated or loaded with the metal and metal-bearing particles, from the valueless gangue. From the resulting concentrate the metals were recovered in various ways.

The processes, of this general character, described in the prior patents may be roughly divided into two classes. The process in the patents of the first class is called in the record the "Surface Flotation Process" and it depends for its usefulness on the oil used being sufficient to collect and hold in mechanical suspension the small particles of metal and metalliferous compounds and by its buoyancy to carry them to the surface of the mixture of ore, water and oil, thus making it possible, by methods familiar to persons skilled in the art, to float off the concentrate thus obtained into any desired receptacle. The waste material, or gangue, not being affected by the oil and being heavier than water sinks to the bottom of the containing vessel and may be disposed of as desired.



The process of the other class, called in the record the "Metal Sinking Process," reverses the action of the surface flotation process and is illustrated by the Cattermole United States patent, No. 777273, in which oil is used to the extent of 4 to 6 to 10 per cent of the weight of the metalliferous mineral matter, depending on the character of the ore, for the purpose of agglomerating the oil-coated concentrate into granules heavier than water, so that they will sink to the bottom of the containing vessel, permitting the gangue to be carried away by an upward flowing stream of water.

The process of the patent in suit, as described and practiced, consists in the use of an amount of oil which is "critical," and minute as compared with the amount used in prior processes "amounting to a fraction of 1 per cent on the ore," and in so impregnating with air the mass of ore and water used, by agitation—"by beating the air into the mass"—as to cause to rise to the surface of the mass, or pulp, a froth, peculiarly coherent and persistent in character, which is composed of air bubbles with only a trace of oil in them, which carry in mechanical suspension a very high percentage of the metal and metalliferous particles of ore which were contained in the mass of crushed ore subjected to treatment. This froth can be removed and the metal recovered by processes with which the patent is not concerned.

It is obvious that the process of the patent in suit, as we have described it, is not of the metal sinking class, and while it may, in terms, be described as a surface flotation process, yet it differs so essentially from all prior processes in its character, in its simplicity of operation and in the resulting concentrate, that we are persuaded that it constitutes a new and patentable discovery.

The prior processes which we have described required the use of so much oil that they were too expensive to be used on lean ores, to which they were intended to have their chief application, and the efforts of investigators for several years prior to the discovery of the process in suit had been directed to the search for a means or method of reducing the amount of oil used, and it is clear from the record that approach was being made, slowly, but more and more nearly to the result which was reached by the patentees of the process in suit in March, 1905. The Froment Great Britain patent (1903) and the Kirby United States patent (applied for in 1903 and granted in 1906) are especially suggestive of the advance which was being made toward the desired result, but the Froment process was little more than a laboratory experiment and has never proved of value in practice, and the Kirby process, though approaching in some respects more nearly to the end attained by the process of the patent in suit, found its preferred application in the use of an amount of oil solution equal to one-fourth to three-fourths in weight of the ore treated, which was prohibitive in cost.

Into this field of investigation at this stage of its development came the patentees of the patent in suit. They were experienced metallurgists of London, of inventive genius and with financial resources, and they entered upon an investigation of the processes of oil concentration of ores which was continued through several years, and consisted of a very extended series of experiments in which the quantities of oil, of water and of acid used and the extent and character of the agitation of the mass under treatment resorted to, were varied to an almost unparalleled extent as to each factor and the results were carefully tabulated and interpreted. It was while pursuing a comprehensive investigation of this character, having, as the evidence shows, the special purpose in mind at the time to trace the effect on the results of the process of a reduction to the vanishing point of the quantity of oil used, that the discovery embodied in the patent in suit was made. The experimenters were working on the Cattermole "Metal Sinking Process" as a basis when it was discovered that the granulation on which the process depended practically ceased when the oleic acid (oil) was reduced to about 5 per cent "on the ore." It was observed, however, that, as the amount of oleic acid was further reduced and the granulation diminished, there was an increase in the amount of "float froth," which collected on the surface of the mass and that the production of this froth reached its maximum when about 1 per cent or slightly less "on the ore" of oleic acid was used. This froth, on collection, was found to consist of air bubbles modified by the presence of the minute amount of oil used and holding in mechanical suspension between 70 and 80 per cent of the total mineral content of the mass treated. It was promptly recognized by the patentees that this froth was not due to the liberation of gas in the mass treated by the action of the dilute acid used, and its formation was at once attributed in large part to the presence of the air introduced into the mixture by the agitation which had been resorted to to mix the oil with the particles of crushed ore, which air, in bubbles,

attached itself to the mineral particles, slightly coated as they were with what was necessarily an infinitesimal amount of oil and floated them to the surface. The extent of the agitation of the mass had been increased as the experiments proceeded until the "series of Gabbett mixers, fitted with the usual baffles, were speeded at from 1,000 to 1,100 revolutions per minute."

A careful consideration of the record in this case convinces us that the facts with respect to the process of the patent in suit are not overstated by the plaintiffs' witness, Adolph Liebmann, an expert of learning and experience, when he says in substance:

"The present invention differs essentially from all previous results. It is true that oil is one of the substances used but it is used in quantities much smaller than was ever heard of, and it produces a result never obtained before. The minerals are obtained in a froth of a peculiar character, consisting of air bubbles which in their covering film have the minerals embedded in such manner that they form a complete surface all over the bubbles. A remarkable fact with regard to this froth is that, although the very light and easily destructible air bubbles are covered with a heavy mineral, yet the froth is stable and utterly different from any froth known before, being so permanent in character that I have personally seen it stand for twenty-four hours without any change having taken place. The simplicity of the operation, as compared with the prior attempts, is startling. All that has to be done is to add a minute quantity of oil to the pulp to which acid may or may not be added, agitate for from two and one-half to ten minutes and then after a few seconds collect from the surface the froth which will contain a large percentage of the minerals present in the ore."

It is not necessary for us to go into a detailed examination of the process in suit to distinguish it from the processes of the patents relied on as anticipations, convinced as we are that the small amount of oil used makes it impossible that the lifting force which separates the metallic particles of the pulp from the other substances of it is not to be found principally in the buoyancy of the oil used, as was the case in prior processes, but that this force is to be found, chiefly, in the buoyancy of the air bubbles introduced into the mixture by an agitation greater than and different from that which had been resorted to before and that this advance on the prior art and the resulting froth concentrate so different from the product of other processes make of it a patentable discovery as new and original as it has proved useful and economical. It results without more discussion, that we fully agree with the decision of the House of Lords, arrived at upon a different record and with different witnesses, but when dealing with the equivalent of the patent in suit, in *Minerals Separations, Ltd., vs. British Air Concentration Syndicate, Ltd.*, 27 R. P. C. 33. In this decision Lord Shaw, speaking for the court and distinguishing the process there in suit especially from the Elmore oil flotation process which had gone before but which was typical of the then prior art said: "They (the patentees of the agitation froth process of the patent in suit) are not promoting a method of separation which had before been described, but they are engaged upon a new method of separation. Instead of relying upon the lesser specific gravity of oil in bulk they rely upon the production of a froth by means of an agitation which not only assists the process of the minute quantities of oil reaching the minute particles of metal, but forms a multitude of air cells, the buoyancy of which air cells, forming around single particles of the metal, floats them to the surface of the liquid."

And Lord Atkinson said: "In their process this mysterious affinity of oil for the metallic particles of the ore is availed of, yet the oil is used in such relatively infinitesimal quantities, that the metallic particles are only coated with a thin film of it, and the lifting force is found not in the natural buoyancy of the mass of added oil, but in the buoyancy of air bubbles, which, introduced into the mixture by the more or less violent agitation of it, envelop or become attached to, the thinly oiled metallic particles, and raise them to the surface, where they are maintained by what is styled the surface tension of the water."

The record shows not only that the process in suit was promptly considered by the patentees as an original and important discovery, but that it was immediately generally accepted as so great an advance over any process known before that, without puffing or other business exploitation, it promptly came into extensive use for the concentration of ores in most, if not all, of the principal mining countries of the world, notably in the United States, Australia, Sweden, Chile and Cuba, and that, because of its economy and simplicity, it has largely replaced all earlier processes. This, of itself, is persuasive evidence of that invention which it is the purpose of the patent laws to reward and protect. *Diamond Rubber Co. vs. Consolidated Tire Co.*, 220 U. S. 428; *Carnegie Steel Co. vs. Cambria Iron Co.*,



185 U. S. 403, 429, 430; The Barbed Wire Patent, 143 U. S. 275; *Smith vs. Goodyear Dental Vulcanite Co.*, 93 U. S. 486.

The claim that the patentees of the patent in suit are not the original discoverers of the process patented because an employe of theirs happened to make the analyses and observations which results immediately in the discovery, cannot be allowed. The record shows very clearly that the patentees planned the experiments in progress when the discovery was made; that they directed the investigations day by day, conducting them in large part personally and that they interpreted the results. *Agawam Company vs. Jordan*, 7 Wall. 583-603, rules this claim against the defendant.

Equally untenable is the claim that the patent is invalid for the reason that the evidence shows that when different ores are treated preliminary tests must be made to determine the amount of oil and the extent of agitation necessary in order to obtain the best results. Such variation of treatment must be within the scope of the claims, and the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject matter. The composition of ores varies infinitely, each one presenting its special problem, and it is obviously impossible to specify in a patent the precise treatment which would be most successful and economical in each case. The process is one for dealing with a large class of substances and the range of treatment within the terms of the claims, while leaving something to the skill of persons applying the invention, is clearly sufficiently definite to guide those skilled in the art to its successful application, as the evidence abundantly shows. This satisfies the law. *Mowry vs. Whitney*, 14 Wall. 620; *Ives vs. Hamilton*, 92 U. S. 426, and *Carnegie Steel Co. vs. Cambria Iron Co.*, 185 U. S. 403, 436, 437.

The evidence of infringement is clear.

While we thus find in favor of the validity of the patent, we cannot agree with the District Court in regarding it valid as to all of the claims in suit. As we have pointed out in this opinion there were many investigators at work in this field to which the process in suit relates when the patentees came into it, and it was while engaged in study of prior kindred processes that their discovery was made. While the evidence in the case makes it clear that they discovered the final step which converted experiment into solution, "turned failure into success," (The Barbed Wire Patent, 143 U. S. 275), yet the investigations preceding were so informing that this final step was not a long one and the patent must be confined to the results obtained by the use of oil within the proportions often described in the testimony and in the claims of the patent as "critical proportions" "amounting to a fraction of 1 per cent on the ore," and therefore the decree of this court will be that the patent is valid as to claims No. 1, 2, 3, 5, 6, 7 and 12, and that the defendant infringed these claims, but that it is invalid as to claims 9, 10 and 11. Claims No. 4, 8 and 13 were not considered in the decrees of the two lower courts and are not in issue in this proceeding.

The decision of the Circuit Court of Appeals will be reversed, and the decision of the District Court, modified to conform to the conclusions expressed in this opinion, will be affirmed.

The claims of the patent are as follows:

The Supreme Court, in its decision, upheld claims Nos. 1, 2, 3, 5, 6, 7 and 12. Claim No. 1 consists in:

- (a) Mixing the powdered ore with water.
- (b) Adding a small portion of an oily liquid having a preferential affinity for metalliferous matter (amounting to a fraction of 1 per cent on the ore).
- (d) Separating the froth from the remainder by flotation.

Claim No. 2 consists in:

- (a) Mixing the powdered ore with slightly acidified water.
- (b) Adding a small portion of an oily liquid having a preferential affinity for metalliferous matter (amounting to a fraction of 1 per cent on the ore).
- (c) Agitating the mixture until the oil-coated mineral matter forms into a froth.
- (d) Separating the froth from the remainder by flotation.

Claim No. 3 consists in:

- (a) Mixing the powdered ore with slightly acidified water.
- (b) Adding a small proportion of an oily liquid having a preferential affinity for metalliferous matter (amounting to a fraction of 1 per cent on the ore).
- (c) Warming the mixture.
- (d) Agitating the mixture until the oil-coated mineral matter forms into a froth.
- (e) Separating the froth from the remainder by flotation.

Claim No. 5 consists in:

- (a) Mixing the powdered ore with water.
- (b) Adding a small proportion of oleic acid amounting to 0.02-0.5 per cent on the ore.
- (c) Agitating the mixture until the oleic acid has been brought into efficient contact with the mineral and has formed a froth therewith.
- (d) Separating the froth from the remainder by flotation.

Claim 6 consists in:

- (a) Mixing the powdered ore with water containing a fraction of 1 per cent of sulphuric acid.
- (b) Adding a small proportion of oleic acid amounting to 0.02-0.5 per cent on the ore.
- (c) Agitating the mixture until the oleic acid has been brought into efficient contact with the mineral and has formed a froth therewith.
- (d) Separating the froth from the remainder by flotation.

Claim No. 7 consists in:

- (a) Mixing the powdered ore with water containing a fraction of 1 per cent of sulphuric acid.
- (b) Adding a small proportion of oleic acid amounting to 0.02-0.5 per cent on the ore.
- (c) Warming the mixture to 30 and 40° C.
- (d) Agitating the mixture until the oleic acid has been brought into efficient contact with the mineral and has formed a froth therewith.
- (e) Separating the froth from the remainder by flotation.

Claim No. 12 consists in:

- (a) Coating the minerals with oil in water containing a fraction of 1 per cent of oil on the ore.
- (b) Agitating the mixture to cause the oil-coated mineral to form a froth.
- (c) Separating the froth from the remainder of the mixture.

In claims Nos. 2, 3 and 12, it will be noted that the amount of oily liquid is specified as a fraction of 1 per cent. In claims Nos. 5, 6 and 7, the amount of oleic acid is specified as being 0.02-0.5 per cent.

Claims Nos. 9, 10 and 11, were found invalid by the Supreme Court. Claim No. 9 provides for the separation of the mineral from the gangue by:

- (a) Coating the mineral with water containing a small quantity of oil.
- (b) Agitating the mixture to form a froth.
- (c) Separating the froth.

In No. 10, the separation is provided for by:

- (a) Coating the mineral with oil in water containing a small quantity of oil.
- (b) Warming the mixture.
- (c) Agitating the mixture to form a froth.
- (d) Separating the froth.

In claim No. 11, separation is provided for by:



(a) Coating the mineral with oil in water containing a small quantity of oil, and a quantity of acid sufficient to cause chemical action on the metalliferous minerals present.

(b) Agitating the mixture to form a froth.

(c) Separating the froth.

### **PREPARATION OF NEW REVISION OF LAWS BILL TO BEGIN SOON**

It is the hope of Dr. Martin D. Foster, Chairman of the House Committee on Mines and Mining, that a revision of the mining laws may be secured without the delay and expense which would be occasioned by sending out an inquisitorial commission. Dr. Foster states that he is not wedded to the bill which bears his name and which is now before his committee. This bill simply was submitted, he says, to form a basis on which to work and to bring out expressions of opinion from the mining men of the country.

Many experienced mining men see very little good in the Foster bill. It is condemned unqualifiedly by many engineers. It seems to be a very general opinion, judging from correspondence being received in Washington, that it is worse than the existing statutes applying to mining.

Dr. Foster is very well pleased with the amount of comment that has been incited by this bill. He apparently has no objection to retiring it entirely, providing something better can be submitted. He is anxious that all ideas as to what is proper for the compilation of a new bill be submitted to his committee.

Steps looking to a constructive suggestion to the committee are being taken by prominent mining men and it is expected that a new bill will be formulated as soon as possible. It is hardly within the range of possibility that such a bill can be presented at this session.

### **LONG CONTINUANCE OF ZINC MINING IN MISSOURI ASSURED**

The immense ore bodies in the southeastern Missouri district insure long continuance of operations, and as a result the concentrating equipment is most modern and complete. All the milling plants are large, most of them are comparatively new, and each has recently been equipped with a flotation section. The Federal Lead Co. will soon complete a 2,500-ton mill at Flat River.—(Extract from the Mining Congress Convention paper of C. E. Siebenthal.)

#### **Says Mining Congress Can Help**

"No more important work faces the American Mining Congress, and the mineral interests generally, than that of impressing upon the people of the United States the tremendous value of the mining industry to the welfare of the country." (Extract from address of C. A) Tupper, at the Mining Congress Convention.

### **LACK OF WATER STOPS MINES IN MISSOURI ZINC DISTRICT**

The value of ore mined in the Missouri-Kansas-Oklahoma district during ten months of 1916, has surpassed the entire production of 1915 by a considerable amount, although less ore has been produced in this time, according to a report from the Kansas City Bank to the Federal Reserve Board. Ore prices have been higher and steadier during the present year. Considerable trouble has been experienced by lack of water, and several shutdowns resulted.

Drainage of the greater part of the productive area of the Leadville (Colo.) district is the one great factor holding promise of increased future activity in this field, the larger part of this territory having been fairly thoroughly developed above water level.

The October output of the Cripple Creek district showed a slight increase in volume, but a lower value. Renewed activity is reported in Colorado's tungsten district, large orders being reported at increased prices. It is claimed that there is very little of this mineral stored in the mining camps. The State coal inspector of Colorado has issued a statement, showing that the production of coal in Colorado during the first nine months of 1916 increased 18 per cent over a similar period last year.

The development of the Mid-Continent oil field has settled down to a steadier and more satisfactory condition than a few months ago, when high prices ruled and promiscuous drilling was common. Operators generally predict a gradually increasing market in the field. October showed a good average month's drilling, with a satisfactory volume of new production, and a lessening of the tension caused by the detrimental pipe-line runs of the past few months. Extreme cold weather early in the present month caught many drillers unprepared, and considerable work was necessarily suspended. The total oil production of Oklahoma for the year, based on the present supply, is estimated to be approximately 95,000,000 barrels. There appears to be no lessening of general activities in Wyoming and Kansas fields, where important wells continue to come in.

### **DR. ASHLEY TAKES CHAIR OF GEOLOGY AT VANDERBILT**

Dr. George H. Ashley of the Geological Survey has accepted a call to the chair of Geology at Vanderbilt University, at Nashville, Tenn. He has not severed his connection with the Survey, as the place may be temporary. Dr. Ashley is filling the position made vacant by Prof. L. C. Glenn, who is engaged in private work.

Copies of the Supreme Court opinion in the Minerals Separation case may be secured from the American Mining Congress, Munsey Building, Washington, D. C. Price 10 cents per copy.

# HALF A BILLION DOLLARS WORTH OF COPPER MINED IN U. S. IN 1916

Output for Last Twelve Months More Than Doubles the Enormous Production of  
1915—Profits for the Year Exceed \$300,000,000—Arizona  
Produces 675,000,000 Pounds

The production of copper in the United States in 1916 surpassed all previous records, according to the United States Geological Survey, Department of the Interior. Preliminary figures and estimates have been collected by B. S. Butler, who has received reports from all plants known to produce blister copper from domestic ores and refined copper. At an average price of about 27 cents a pound the output for 1916 has a value of \$520,000,000, compared with \$242,900,000 for the output for 1915, and with \$189,790,000 in 1913.

The figures showing smelter production from domestic ores represent the actual production of most of the companies for 11 months and an estimate of the output for December. The figures of a few companies for November were not available, and these companies furnished estimates for the last two months of the year.

According to the statistics and estimates received, the output of blister and Lake copper from domestic ores was 1,928,000,000 pounds in 1916, against 1,388,000,000 pounds in 1915, and 1,224,000,000 pounds in 1913.

The output of refined copper (electrolytic, Lake, casting and pig) from primary sources, domestic and foreign, for 1916, is estimated at 2,311,000,000 pounds, compared with 1,634,000,000 pounds in 1915, and with 1,615,000,000 pounds in 1913.

The production of copper from the mines of the United States for 1916 was more than double that of 10 years ago and more than four times that of 20 years ago. The profit resulting from the domestic production was far greater in 1916 than in any previous year. It is probably safe to say that it exceeded \$300,000,000.

## FOREIGN TRADE

According to the Bureau of Foreign and Domestic Commerce, the imports of all forms of unmanufactured copper for the first 10 months of 1916 amounted to 397,594,000 pounds. This compares with an import of 265,677,000 pounds for the first 10 months of 1915. The imports for the 12 months of 1915 were 315,698,449 pounds.

The exports of pigs, ingots, bars, plates, sheets, rods, wire, etc., for the first 10 months of 1916, as determined by the Bureau of Foreign and Domestic Commerce, amounted to 655,472,000 pounds compared with an export for the first 10 months of 1915 of 529,-

286,000 pounds. The exports for the 12 months of 1915 were 681,917,000 pounds.

At the beginning of 1916 there was about 82,400,000 pounds of refined copper in stock in the United States. This quantity added to the refinery production gives a total available supply of about 2,393,000,000 pounds of refined copper. On subtracting from this amount the exports for the first 10 months and the estimated export for the last 2 months, it is apparent that the supply available for domestic consumption is materially greater than the 1,043,000 pounds of 1915, no account being taken of stocks held at the close of the year.

## HIGHER PRICES IN 1916

The average price of copper for 1916 showed a marked increase over that of the preceding year, being slightly above 27 cents a pound, compared with 17.4 cents in 1915.

Much of the copper was sold several weeks or months in advance of delivery, and it is, therefore, probable that the actual average price received differs somewhat from the average of the daily quotations for immediate delivery. The general trend of the market would indicate that the actual price received may be below that indicated by the average of quotations.

## RECORD BY STATES

Arizona made a record production. The total may reach 675,000,000 pounds as compared with 432,000,000 pounds in 1915. This exceeds the total output of the United States as late as 1902.

Montana, with more than 350,000,000 pounds, exceeded its previous record production of 314,900,000 pounds in 1912. This compares with about 268,000,000 pounds produced in 1915.

Michigan, in common with other important copper producing States, made a record production. The output for 1916 was about 269,000,000 pounds, as compared with about 238,900,000 pounds in 1915, the previous record production.

Utah may show an increase of 60,000,000 pounds over the previous record production of 175,000,000 pounds in 1915.

The output from Alaska estimated at over 120,000,000 pounds compares with 70,600,000 pounds for 1915.

The production from Nevada will nearly



reach 100,000,000 pounds, which compares with the previous largest production of 85,200,000 pounds in 1913, and with 67,700,000 pounds in 1915.

The production of New Mexico will probably reach 90,000,000 pounds as compared with 62,800,000 pounds for 1915.

California, with a production that may exceed 60,000,000 pounds, showed a large increase over the previous record production of over 53,000,000 pounds in 1909. In 1915 the production was 37,600,000 pounds.

Tennessee alone among the important copper-producing States failed to show a record output. The production was probably slightly below 15,000,000 pounds, as compared with over 18,000,000 pounds for 1915.

### **DRAFT OF WATER POWER BILL SUBMITTED BY SECRETARY**

Secretary Lane has suggested to the President, as a solution of the many conflicting water-power bills, the following measure:

#### **PROPOSED WATER-POWER ACT**

Section 1. This Act shall be known as the Water-Power Act.

Section 2. The Secretary of War, the Secretary of the Interior, and the Secretary of Agriculture shall compose a Water Power Commission.

Section 3. This Commission shall have power to grant leases for the use of all public lands (including reservations) and navigable streams for the development of water power, under such terms and conditions as shall be by them prescribed by general regulations; no such lease to extend for longer than fifty years.

Mr. Lane says that the advantages of this bill would be:

1. The administration would be held responsible for whatever terms and conditions were made as to such leases.

2. These terms and conditions would be known and fixed before the lease was made.

3. The terms and conditions could be made so as to draw a distinction between the use of navigable waters and others.

4. Such a measure would eliminate all controversy in Congress over details.

5. By regulation everything could be accomplished that is sought to be accomplished by the Ferris, Myers, Adamson, or Shields bill.

6. There would be no danger of the caprice of any single cabinet officer, or his prejudice or favor, controlling the conditions of the leasing.

### **PRODUCES 900 TONS ZINC CONCENTRATES MONTHLY**

The output of the zinc mine at Edwards, N. Y., for 1915 was 5,618 tons of concentrates, containing 2,455 tons of recoverable zinc. The mine is at present producing at the rate of 900 tons of concentrates a month, and the output for 1916 will be about 5,000 tons of recoverable zinc.—(Extract from the Mining Congress Convention paper of C. E. Siebenthal.)

### **COMPETITION FAILS TO AID CONSUMER OF COAL**

"Competition seems to have failed of late years to benefit the consumer of coal. In the bituminous fields the competition whenever present has been wasteful, and in the anthracite fields there has been practical absence of healthy competition; and whether too great or too little competition, the result is the same—to increase the actual cost of bituminous coal by saddling the industry and its product with the fixed charges on idle or semi-idle mines and to raise the price of anthracite coal by favoring the burdens of high resource costs." (Extract from the address of Geo. Otis Smith at the Mining Congress Convention.)

### **MISLEADING TERM "WOLFRAM" IS FALLING INTO DISUSE**

"Wolfram" is the English term for both the metal tungsten and the mineral wolframite. It is an awkward term, says Frank L. Hess, of the U. S. Geological Survey, descending from the old Saxon miners. However, the English, like the Americans, are beginning to use both words, tungsten and wolframite, and thus make the objects distinguishable. Tungsten is a metal, as is gold, tin, copper, or iron. Wolframite is a mineral which contains tungsten, iron, manganese, and oxygen, and is probably the most common ore mineral of tungsten.

### **BUREAU OF MINES STRENGTHENS A. M. C. CONVENTION PROGRAM**

The Bureau of Mines is proud of the important part which it took in the Chicago convention of the American Mining Congress. Among those contributing to the program at the convention were the following members of the staff of the Bureau of Mines: Van H. Manning, Director; F. G. Cottrell, Chief Metallurgist; Dorsey Lyon, Metallurgist; W. A. Williams, Petroleum Technologist; A. H. Fay, Statistician; Hennen Jennings, Consulting Engineer; John Hays Hammond, Consulting Mining Engineer; R. B. Moore, Chemist; Dr. Walter F. Rittman, Consulting Chemist; Ralph Arnold, Consulting Petroleum Technologist; Dr. David T. Day, Consulting Chemist; J. W. Thompson, Law Examiner; J. W. Paul, Consulting Safety Engineer.

#### **Kentucky Operators Meet**

The December meeting of the Kentucky Mining Institute was held December 8 and 9, at Louisville, Ky. Very interesting sessions are reported. It was one of the most interesting and successful meetings ever held by the Institute.

Copies of the Supreme Court opinion in the Minerals Separation case may be secured from the American Mining Congress, Munsey Building, Washington, D. C. Price 10 cents per copy.

# PRINCIPAL ACHIEVEMENTS OF BUREAU OF MINES DURING YEAR SUMMED UP

Director Manning, in Concise Statement, Shows Long List of Things Accomplished  
in the Interest of the Mining Industry—Over 8,000 Miners  
Trained in First-Aid Work

Van H. Manning, director of the Bureau of Mines, in his annual report, makes a concise summing up of the work of the year as follows:

More than 8,400 miners were trained in mine rescue and first aid. On June 30, 1916, the total number of miners trained by the bureau since its organization was 42,045.

Representatives of the bureau attended and investigated eighty-nine accidents throughout the United States. Seventy-five men were rescued through the efforts of volunteer miners, company officials, State mine inspectors, and company rescue crews.

Forty-seven mine rescue and first-aid contests were held under the auspices or with the assistance of the Bureau of Mines.

Considerable progress was made in improving breathing apparatus for use in rescue and exploration work after mine explosions and fires.

Different types of breathing apparatus were demonstrated before thousands of miners.

Safety measures introduced in the gaseous coal mines of Oklahoma, with the assistance of the Bureau, have resulted in greatly reducing the number of explosions in these mines.

The study of coal-mine explosions and methods of preventing and limiting them was continued, and important advances were made in the application of preventive methods.

Sanitation and health conditions in mining towns were investigated and much valuable information obtained.

An investigation of hookworm in California mines, made in cooperation with State officials, resulted in measures being adopted which it is believed will eventually eradicate the disease in that State.

Health conditions among miners in the Joplin district, Missouri, have been greatly improved, largely as a result of the work of Bureau representatives in that district, and the high death rate from consumption will be reduced.

A study of conditions in the Butte, Mont., region was begun, with the result that miners' consumption has been shown to be prevalent among miners in that district.

The problem of subsidence of surface ground over mine workings in Illinois was studied and similar work in the anthracite region of Pennsylvania was continued.

Mining engineers of the Bureau actively assisted in investigating safety conditions in California mines and in formulating the mining regulations tending to increase safety, subsequently adopted by that State.

The Bureau assisted the department in the division of the Alaskan coal fields into leasing

units and in preparing the regulations governing the leasing of coal lands in Alaska.

Considerable progress was made in investigations of smelter-smoke problems and of methods of removing from smelter smoke the constituents injurious to vegetation and animal life.

The possibilities and limitations of the wet Thiogen process for reducing sulphur dioxide to elementary sulphur were demonstrated.

A comprehensive report on the reduction of barium sulphate, of importance to paint and other industries, was prepared.

Progress was made in studies of the absorption and concentration of sulphur dioxide from smelter smoke and the purification of crude sulphur and arsenic.

Considerable progress was made in the work on cyanidation and allied processes for the treatment of gold and silver ores.

Methods were developed for treating low-grade complex gold, lead, silver, and zinc ores that if commercially successful will render available millions of tons of ore that cannot now be treated profitably.

Encouraging results were obtained in the application of a process for extracting zinc from low-grade oxidized ores not amenable to present processes.

Methods of mining and milling lead and zinc ores in the Joplin district, Missouri, have been greatly improved and losses reduced as a result of the investigation conducted by engineers of the Bureau.

An extensive investigation of causes and prevention of accidents at blast furnaces was completed and two reports on the subject prepared.

Methods of increasing safety at iron and steel works were investigated.

Health conditions in steel mills were studied and methods of improvement recommended.

Much valuable information was obtained on the corrosion of hoisting and pumping equipment by acid waters in mines, and the resistive qualities of different metals and coverings.

An investigation of the fluidity of blast-furnace slag and its relation to the composition of the slag and the iron obtained was begun.

An improved apparatus for measuring the viscosity of substances at high temperatures was devised.

A report on gold dredging, containing detailed figures as to operating costs and other data hitherto most carefully guarded by dredge operators was prepared for printing as a bulletin of the Bureau.

Several grams of radium has been produced



in cooperation with the National Radium Institute and has been delivered to the Howard A. Kelly Hospital, Baltimore, and to the General Memorial Hospital in New York City, for use in the treatment of cancer. The cost of production was a little over one-third the present market price.

Investigations of sandstone and marble quarries were continued and a report on safety in quarrying and one on the technology of marble quarrying were published.

Methods were devised for concentrating valuable radium ores of Colorado and Utah, heretofore wasted. Nearly 2,000 tons of such ore has been concentrated in cooperation with the National Radium Institute.

Investigations of the technology of molybdenum and its ores were completed and a bulletin, describing methods of occurrence, concentration, and use, was prepared for printing.

Secondary kaolins (china clays) in the coastal plains of South Carolina and Georgia, heretofore unavailable for white ware, have been made available for the highest quality of tile and china.

An investigation of manganese deposits in the United States and of methods of mining and recovering manganese was begun.

Studies of the Bureau have shown that metal losses in melting brass and aluminum chips can be greatly reduced, and an electric furnace for melting brass was developed.

The practicability of substituting domestic clay for English china clay in the manufacture of white ware products was demonstrated.

The relative explosibility of coal dusts from various mines and the proportion of rock dust required to make the coal dust inert were determined.

The study of the origin and constitution of coal was continued.

The properties of mine gases were investigated and a descriptive chart for display at mines was prepared for printing.

A gas detector for quickly determining inflammable gases in mine air was perfected.

Hoisting equipment in coal mines, and ways and means of preventing accidents in shaft and slope hoisting were investigated.

Progress was made on an improved type of oxygen rescue apparatus being developed by the Bureau.

Various types of electric mine lamps have been greatly improved through recommendations made by the Bureau.

Two types of explosion-proof coal-cutting equipment were approved.

Rules setting a proper standard of safety for the installation and operation of electrical equipment in bituminous coal mines, prepared by the Bureau, have helped greatly to increase safety in mines using such equipment.

Tests of explosion-proof storage-battery locomotives for use in gaseous mines were begun.

Types of flame safety lamps were improved.

The specifications for purchase of fuel for Government use were simplified and methods of analysis and sampling have been greatly improved, resulting in an increased saving to the Government.

Several Government power plants were inspected, by request of the departments concerned, resulting in a considerable decrease in fuel costs through the adoption of measures recommended by the Bureau.

A report on methods of saving fuel in heating dwelling houses has been of great benefit to the public at large.

The studies of combustion of coal in boiler furnaces was continued and much valuable information obtained.

Tests to determine the relation of the fusibility of coal ash to clinker trouble were made.

The use of coke as a domestic fuel and the coking qualities of various domestic coals were investigated.

Investigation of the methods of operating gas-producers plants was continued.

Important information regarding the character of the oil shales in the West was obtained.

The practicability of the Rittman cracking process for making gasoline, benzene, and toluene from petroleum has been demonstrated, and several commercial plants are in operation or process of erection.

As a result of the Bureau's work showing the necessity of properly protecting oil, gas, and water-bearing formations in drilling wells, in order to prevent escape and dissipation of the oil, gas, and water into other sands, millions of dollars' worth of oil and natural gas will be saved that would otherwise have been lost.

The value and the methods of using mud-laden fluid in drilling and closing oil and gas wells were demonstrated.

An investigation of the use of compressed air and water for flushing oil sands to increase the percentage of recoverable oil was conducted.

A study of the reactions and products in cracking petroleum by the Rittman process was made.

The properties of the chief grades of gasoline marketed in the United States were determined.

Methods for the analytical distillation of petroleum were investigated.

A study of the production, transportation, and distribution of natural gas in the Kansas-Oklahoma fields was begun.

A study of the production of gasoline from natural gas was made, and the results will help to increase the utilization of natural gas for making gasoline.

Methods and devices for controlling fires at oil and gas wells were studied.

Valuable information was obtained on the prevention of losses in storing petroleum.

Maps showing the location of wells, storage tanks, and pipe lines of the producing oil and gas fields of the United States were prepared.

### **Name of Company Changed**

The name of the W. R. Garton Company, of Chicago, was changed January 1, to Electrical Material Company. This company was organized in 1898. Ray P. Lee is president of the new company. The offices of the company are now at 618 West Jackson Boulevard.

# PUBLIC NEED FOR APPLIED SCIENCE BECOMES MORE EVIDENT THAN EVER

George Otis Smith in Annual Report on Work of Geological Survey Points to Increasing Research Work—Bureau Enlarging Policy of Speeding Up Statistics

"The increased extent to which the large industrial corporations of the country now support their own departments of scientific research is a gratifying development of the times," says George Otis Smith, director of the Geological Survey in his annual report. "Science is regarded as a necessity rather than a luxury. And this coming of science into its own as a large factor in the industrial life of the Nation is necessarily followed by a certain reaction of business upon science. Never before, perhaps, has the demand been so keen for research that is no less than ever scientific in spirit and in method but that has a definite purpose and yields definite results. The idea of making science useful is not new, but the utility of science has become more universally the test of its value."

Continuing, Dr. Smith says:

"In the scientific work done under the Federal Government this demand for results is abundantly justified by the public need. If the strongest corporations are making large use of chemists, physicists, and geologists, the general public has similar need in its service for applied science."

"The business policy of organizing scientific investigation for effective work, however, is far from novel, for in 1878, in the report to Congress advocating the creation of the United States Geological Survey, the National Academy of Sciences described the ideal plan for a scientific bureau as that which would yield the 'best results at the least possible cost.' Since that day, moreover, economy in science has become a more pressing issue."

"At the centennial exercises of the United States Coast and Geodetic Survey, in April, 1916, the Director of the Geological Survey called attention to the gratifying fact that for nearly four decades the two Surveys had worked side by side in the cause of American science coordinately rather than competitively. The result has been economy instead of waste. With this record in mind the appeal was then made for the application to the business of two score Federal scientific bureaus of the same rules that the legislatures and courts now enforce for the control of corporations. Unrestrained competition in the public service is no less wasteful than unregulated competition in private business. The ideal of the best service at the lowest cost leads to the recognition of the idea of natural monopolies in the Government scientific service, for

this recognition will insure the same real saving to society that has come with the recent growth of public-utility monopolies. It does not follow that because the scientific bureau offers a special service to the public without direct price the public official is any less vitally interested in actual costs."

If the scientific work of the Government is to be organized on the basis of specialization rather than of competition the correlative idea of adequate regulation must be adopted. A large share of this duty of insuring a proper coordination of the public scientific work must be accepted directly by the bureau chiefs and their immediate advisers in the work of administration. Moreover, to this group of Government scientists the obligation is double—they are constrained as public servants to avoid wasteful use of public money and as scientists to conserve scientific effort by preventing duplication in research and in publication. Faith in the effectiveness of highly specialized science must carry with it the belief that some one bureau, by reason of its organization, personnel, and experience, can conduct scientific investigations of a certain kind better than any other bureau. This is practical logic of the type that is recognized in private business, for under the public regulation of natural monopoly the public-utility company that first enters the local field is recognized and even protected by the public-service commission as long as the service it renders is at all adequate. The attempt of an overzealous bureau chief to seek preferment for his bureau on other grounds is not in harmony with the public-service idea that the Federal scientific bureau is only an agency to get results that are of largest value to the public it serves."

## HAVE VALUE AS NEWS.

"A leading trade journal in a recent editorial commented upon the United States Geological Survey's 'enviable reputation for accuracy and preciseness throughout all its different branches,' but added that in maintaining this accuracy the Survey had 'in the past shown a tendency to ignore the necessity for promptness in placing its vast store of statistical data before the public.' This editorial, which was headed 'Geological Survey speeding up on statistics,' was prompted by the innovation in publishing statistics of coal production referred to below."

"The obvious difficulty of giving to the public statistical data that are accurate and yet



not somewhat out of date has been met since 1910 by supplementing the complete detailed reports with the publication in the first week of January of preliminary estimates of mineral production for the year just ended. These new-year statements have now attained a degree of accuracy that not only meets the practical needs of most users of this information but also robs the later complete reports of their news value. Thus the Survey's estimate of the gold output of Alaska for 1915, published January 1, 1916, was less than 1.2 per cent in excess of the final figures made public about four months later, and Alaska's exceptionally large yield of copper was estimated within 3 per cent. For the last two years the preliminary estimates of the coal output of the United States were only four-tenths of 1 per cent and 2.6 per cent in error; for the more erratic petroleum industry the estimates of marketed output published January 1 have been one-half of 1 per cent and 5 per cent of the final figures; the preliminary estimates of cement were within three-tenths of 1 per cent and four-tenths of 1 per cent of the actual output. The Survey geologist who made an estimate of the output of iron ore for 1914, in a statement issued January 1, 1915, 'approximated' the final figures with an error of only 239 tons, and his preliminary figures for the output in 1915, published January 1, 1916, were within nine-tenths of 1 per cent of the complete final figures.

"It is, of course, through the collection of detailed statistics from individual producers that the specialist is able to keep so closely in touch with his subject that his preliminary estimates have high value for approximate accuracy. Some advances have been made in the date of publication of the final statistical reports, but here the compiler encounters the difficulty of obtaining full and prompt co-operation from a very small minority of the producers, so that it is the last 1 or 2 per cent of the returns that cost the most time and effort. A gain of weeks in the date of publication of the statistics of some products might be made, but only at a sacrifice in the quality of the results. The standard of accuracy maintained by the man of scientific training shows itself in his aversion to round figures. The Survey will continue to seek improvement in the promptness of issue of the final reports, but the public need for authoritative mineral statistics possessing full news value will be met by estimates published January 1 and at other times in the year. The Survey's new-year and mid-year statements have already won a place in the public press because they furnish the business interests with impartial estimates of the rate of production of the raw materials and fuels that are so essential to the Nation's industry and commerce.

"As information to be valuable must be timely, the Geological Survey regards the preparation and issue of its quarterly and monthly statements as representing the ideal plan for statistics of all the principal metals

and mineral fuels. Already a further step in the same direction has been planned: commencing August 15, the Survey will issue every month a comparative statement of railroad movement of coal and coke for the preceding month. It is believed that these authoritative figures will furnish the public a valuable index of the general industrial conditions as well as of the current rate of utilization of the country's mineral reserves."

### **MINE WORKERS RECEIVING AS HIGH AS \$13.50 DAILY**

A report to the Federal Reserve Board from its San Francisco bank says:

"Alaska, in common with other mining regions, is enjoying the prosperity caused by the prevailing high prices of metals. This is due largely to the copper production of the Kennecott mines, also to the increased activity in production from the low grade deposits near Juneau.

"Mining throughout the district is steadily expanding. The output of copper is continually making new records with enormous profits, particularly in Arizona, Utah, and Nevada. Prices are higher than at any time since the Civil War, when they were quoted in depreciated currency as high as 55 cents per pound. Miners are reported as receiving as much as \$13.50 per day."

### **BUREAU OF MINES WORKING HARD ON NITROGEN PROBLEM**

In an effort to oxidize ammonia to nitric acid, the Bureau of Mines has entered into a cooperative agreement with the Semet-Solvay Company at Syracuse, N. Y. This company is conducting extensive experimentation in this matter.

The Bureau has been taking a prominent part in the Government's investigation of the fixation of nitrogen. In addition to studies made in its laboratories, Dr. Charles S. Parsons, the Chief of Division of Mining Technology, has just completed an inspection of a number of European nitrogen plants. It is expected that the method of obtaining nitrogen from sources other than Chilean saltpetre will be decided largely on the recommendations which will be made by Dr. Parsons.

### **EXTRAORDINARY DEMAND FOR LEAD AND ZINC WELL MET**

The lead and zinc producing districts of the United States have responded well to the extraordinary demands made upon them since the beginning of the war. The lead content of ore mined rose from 500,000 tons in 1913 to 523,000 tons in 1914 and 562,000 tons in 1915. The recoverable zinc content of ores mined was 406,000 tons in 1913, 407,000 tons in 1914, and 606,000 tons in 1915.—(Extract from the Mining Congress Convention paper of C. E. Siebenthal.)

### GOVERNMENT EXPERTS WELL KNOWN TO MINING MEN



FRANK L. HESS  
Geologist

### THREE BILLION DOLLARS IN MINERAL PRODUCTION

In 1880, when the output of the mines of the United States barely exceeded in value one-third of a billion dollars, the first Director of the United States Geological Survey made this prophecy: "The mineral industries of the United States will soon reach an annual money yield of a thousand million dollars of value." This mark was in fact attained in 1899.

Speaking before the American Mining Congress in November, 1907, another Director of the Geological Survey referred to the probability that that year would mark an epoch in the mineral industry by reason of the mineral output reaching two billion dollars in values, and later the complete statistics verified this statement. Now less than 10 years later the advance estimates submitted by the Geological Survey to the Secretary of the Interior indicate that the total value of mineral production in 1916 may reach the three billion dollar mark.

### METALLURGICAL EXAMINATION SET FOR JANUARY 16

The United States Civil Service Commission has announced an open competitive examination for supervising mining engineer and metallurgist. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bureau of Mines for service in the field, at a salary of \$4,000 a year, and vacancies as they may occur in positions requiring similar qualifications.

The duties of this position will be to take charge of one of the mining experiment stations, to supervise investigations and to disseminate information with a view to improving conditions in the mining, quarrying, metallurgical, and other mineral industries in the district served by the station, especially with a view to preventing unnecessary waste of resources and otherwise contributing to the advancement of these industries.

Competitors will be rated on the following subjects, which will have the relative weights indicated:

| <i>Subjects</i>                          | <i>Weights</i> |
|------------------------------------------|----------------|
| 1. Education.....                        | 30             |
| 2. Professional experience..             | 50             |
| 3. Publications, reports, or thesis..... | 20             |
| Total. ....                              | 100            |

Graduation from a college or university of recognized standing in mining engineering or metallurgy, and at least five years of responsible experience in mining engineering, two years of which must have been along metallurgical lines, are prerequisites for consideration for this position.

Under the third subject the applicant must submit publications, reports, or a thesis. If a thesis is submitted it should deal with some phase of mining or metallurgy.

Applicants must not have reached their fiftieth birthday on the date of the examination.

### VIRGINIA EXPECTED TO INCREASE ITS PRODUCTION OF ZINC

Considerable prospecting is being done in the zinc regions of Virginia, and there is a possibility of opening other productive mines in the limestones of the Great Valley region, but apparently the most promising field for increased zinc production is in the pyrite belt of Louisa and Spotsylvania counties. The pyrite mines have always contained a little lead and zinc ore, but only very small shipments have been made. The ore of the Allah Cooper and Holladay mines contains more lead and zinc, and the latter mine especially is being actively developed as a zinc mine. The vein has been opened by several shafts and drifts, which are reported by the company to have proved 50,000 tons of mixed sulphide ore of practically shipping grade. —(Extract from the Mining Congress Convention paper of C. E. Siebenthal.)



# ARIZONA METAL MINES PRODUCE \$203,000,000 IN YEAR JUST CLOSED

**Copper Is Mainly Responsible for an Increase of 123 Per Cent in the Value of the Mineral Output of the State—Nearly 700,000,000 Pounds of Copper Mined in 1916.**

The output of gold, silver, copper, lead, and zinc from mines in Arizona in 1916 had a record total value of nearly \$203,000,000, compared with \$90,806,349 for 1915, according to the estimate of Victor C. Heikes, of the United States Geological Survey, Department of the Interior. The notable output of copper and the high prices of metals both assisted in this increase of 123 per cent. There were record productions, also, of gold, silver, copper, lead, and zinc.

The production of gold from Arizona mines increased from \$4,166,025 in 1915 to approximately \$4,427,000 in 1916, an increase of over 6 per cent. The production of gold from copper ores in most counties was naturally greater than in 1915, but there was a marked decrease in the output of bullion from amalgamation and cyanide mills, particularly in Mohave and Maricopa counties. Several new gold mines were added to the list during the year, especially in the Oatman camp, Mohave County, but the production was not sufficient to offset the decline in the output of the older properties. A new 200-ton mill was being completed for the United Eastern property, and considerable ore was opened at the Big Jim and Gold Ore mines.

The production of silver from the mines increased from 5,649,020 ounces in 1915 to a record output of about 6,823,000 ounces in 1916. As the market price was much higher, the value increased from \$2,864,053 to nearly \$4,490,000, an increase of nearly 57 per cent in value. There was no great change in the production from the Commonwealth property, which is principally a silver producer, so the increase is to be credited largely to the remarkable output of copper ore.

The mine output of copper surpassed all records and estimates, as it increased from 459,972,295 pounds in 1915 to approximately 693,000,000 pounds in 1916. The value of the output, on account of the unusual market, increased from \$80,495,152 to nearly \$190,000,000. The increase of 135 per cent in the value of copper alone in Arizona was, therefore, more than the value of the total output of the State in the previous year. All the smelting plants of the State were worked at full capacity and made much greater shipments of copper bullion. The plant at Sasco, in Pima County, was again operated and made a large contribution. The Inspiration mine was milling nearly 500,000 tons in August and was producing 11,000,000 pounds of copper, an output that made it one of the largest producers in the State. The Ray Consolidated, Miami, United Verde, and United Verde Extension made great in-

creases. The Swansea property, in Yuma County, made a larger output, and a large leaching plant was being constructed at Ajo, in Pima County.

The mine production of lead increased from 21,738,969 pounds in 1915 to a record production of over 26,000,000 pounds in 1916. The value of this output increased from \$1,021,732 to \$1,768,000, or 73 per cent. The Copper Queen and Shattuck-Arizona mines, in the Warren district, and the Tennessee mine, in Mohave County, continue to contribute the largest part of the lead output.

The production of zinc from the mines increased from 18,220,863 pounds, valued at \$2,259,387, in 1915 to about 20,980,000 pounds, valued at \$2,874,260, in 1916, an increase of nearly 27 per cent in value. The greater part of the zinc ore and concentrates was shipped from the Golconda and Tennessee properties, in Mohave County. There were, however, two new and important shippers of zinc ore—the Magma Copper Co. in Pinal County, which opened up zinc ore and constructed a concentrator late in the year, and the Duquesne property, in Santa Cruz County. Shipments were also made from the Kingman Zinc Co. near Kingman, the San Xavier mine, in Pima County, and the Gemmill-Randolph tailings at Crownking. Possibly 28,000 tons of crude zinc ore and concentrates were shipped from the State during the year.

Dividends paid to December 1 amounted to nearly \$34,000,000. The contributors were the Copper Queen, Inspiration, Calumet & Arizona, United Verde, Ray Consolidated Miami, Shattuck-Arizona, United Globe, United Verde Extension, and Grand Gulch.

## UNIFORM LAWS WILL INFLUENCE DIFFERENT STATES

"There is a certain amount of indifference on the part of operators, miners and legislators as to the enactment or enforcing of mining laws—a feeling that mining like agriculture or common commercial industries does not require special legislation. The satisfying feature of this situation is that the refusal of any such State to adopt a uniform law would not prevent other and leading States from enacting such a law. Furthermore, the adoption of a uniform law by any considerable number of States would be the last argument for the adoption of such a law by the States at present indifferent to any law." (Extract from address of J. W. Thompson at the Mining Congress Convention.)

## GEO. S. RICE MAKES STUDY OF CROW'S NEST TROUBLE

Outbursts of gas and "bumps," which have threatened the very continuance of mining operations in the Crow's Nest coal fields of British Columbia, offer no insurmountable obstacles, in the opinion of George S. Rice, chief mining engineer of the Bureau of Mines, who just has returned from an examination of the district, on invitation of the Minister of Mines of the Dominion of Canada. Mr. Rice admits, however, that there are more adverse natural conditions in these mines than in any other with which he is familiar. Mr. Rice made exhaustive examination at a number of mines in company with Thomas Graham, the mine inspector for British Columbia and Provincial Mineralogist Roberston.

Not only is the coal which is mined in the Crow's Nest district of good grade, but it is an important source of supply for American railroads and smelters. In fact the Crow's Nest Pass Coal Co. is said to be a subsidiary company of the Great Northern Railroad. Apparently, British Columbia does not fear monopoly as the railroad was allowed to select over 200,000 acres of land in the most important coal field in British Columbia, thus insuring the opening up of the field. Incidentally the opening of this coal field has been of material advantage to smelters in the northwestern part of the United States, which are large consumers of the very excellent coke which is made from Crow's Nest coal. The Bureau of Mines has another reason for being anxious to learn as much as possible of the means of combating these phenomena in that similar occurrences are taking place in the Mount Ranier coal fields of Washington.

The term "bumps" is of English origin, Mr. Rice believes. The word is not in common use among miners in this country and has been interpreted by many to indicate a sudden "squeeze" or buckling of the floor or walls of mine passage ways. This is not the case, as the word is practically synonymous with "jar." It has its origin in the shocks accompanying earth movements.

In 1907 and 1908 a series of "bumps" occurred in the Crow's Nest district, accompanied by some outbursts of gas. This resulted in several fatalities and was the direct cause of the abandonment of work in the No. 2 mine. Mr. Rice believes that the great thickness of the covering material has much to do with the earth movements which are responsible for the "bumps." In the No. 2 seam the pressure on the unmined coal is no less than 2,000 pounds to the square inch.

Another bed of coal 150 feet higher up the mountain was opened following the prohibiting of further work in a part of the No. 2 seam. The immediate roof is soft and treacherous but above this there is a strong shale "main" roof. Work on this No. 1 seam was laid out systematically and with special care to prevent the disasters of the lower bed. Only 25 per cent of the coal was excavated. For some time after the opening of the No. 1 seam, there was complete immunity from "bumps," but from Novem-

ber 7 to November 13, 1916, a series of severe "bumps" occurred. Due to the fact that the first occurrence took place at night but few persons were endangered. Great falls occurred and the inner workings of the mine are still inaccessible.

A striking feature of the recent damage in the upper mine, Mr. Rice states, is that the "bumps" occurred in an area coinciding with that in which they took place in the lower workings.

Mr. Rice is not at liberty to announce his conclusions at this time. As soon as samples of gas and coal have been analyzed he will submit a report to the Minister of Mines.

## BUREAU OF MINES TO CATCH UP ON METALLIFEROUS WORK

There are several problems connected with the iron industry that are in urgent need of intensive scientific investigation. Among them are:

1. Methods of mining.
2. Concentration of iron ores.
3. Problems of iron metallurgy.
4. Study of phosphorus, potash and other by-products.

The Bureau of Mines is planning work along these lines.

It was the idea of the late Dr. Holmes, the first director of the Bureau of Mines, to establish a large central mining experiment station, to be devoted to the metalliferous side of mining. The Pittsburgh station which is devoted largely to coal was founded with this idea in view. Later it developed that it would be easier to obtain appropriations for several stations, if they should be scattered throughout the mining States.

Since circumstances have prevented the Bureau of Mines from giving metalliferous mining the same attention as coal mining, every effort is being made, now that the Bureau is free to study the problems of metal mining, to make up for the time during which it was impossible to study this question.

Copper is to receive special attention at the Tucson station and is also being given attention in Salt Lake City and at other branches of the Bureau.

Zinc also is receiving attention at Urbana and will be the subject of research at Seattle.

It is anticipated that the Seattle station will be ready for the active pursuit of its work by February 1. Dorsey A. Lyon expects to reach Seattle, January 6. The building which will house the station at Seattle is undergoing repair so that February 1, is as early as it will be possible to begin the regular work, it is believed.

Work already is in progress at Tucson. Dr. Von Barnevelt, the superintendent, after starting some of the work has gone to Berkely and to Salt Lake City to arrange for the proper inter-relation of the work with those stations.

The Bureau officials here are just now in the throes of the civil service procedure necessary to secure the members of the staffs of the three stations.



# COLORADO PRODUCES \$49,000,000 IN MINERALS DURING LAST YEAR

Products of Mines Sell for More than Twice as Much Money as Was Received in 1915—Zinc Alone Shows Increase of Nearly \$5,000,000 over Preceding Year

The mine output of gold, silver, copper, lead, and zinc in Colorado for eleven months of 1916 and the estimated output for December, according to data compiled by Charles W. Henderson, of the United States Geological Survey, Department of the Interior, indicates a yield for the year of \$18,940,000 in gold, 7,620,000 ounces of silver, 70,200,000 pounds of lead (in terms of lead in lead bullion and lead in leaded-zinc oxide), 8,600,000 pounds of copper, and 130,000,000 pounds of zinc (in terms of spelter and zinc in zinc oxide), with a total value of nearly \$49,000,000 compared with \$22,414,944 in gold, 7,027,972 ounces of silver, 68,810,597 pounds of lead, 7,112,537 pounds of copper, and 104,594,994 pounds of zinc, with a total value of \$43,426,697 in 1915. This shows a decrease of nearly \$3,475,000 in gold, but increases of 592,000 ounces of silver, 1,390,000 pounds of lead, 1,487,000 pounds of copper, and 25,000,000 pounds of zinc. With the increased average value of metals, the values show increases of \$1,451,000 for silver, \$1,540,000 for lead, \$1,103,000 for copper, and \$4,840,000 for zinc.

The tonnage treated by the Globe, Leadville, Pueblo, Durango, and Salida smelters was approximately the same as in 1915, the ore coming from Canada, Colorado, Idaho, South Dakota, and other States, and including a greatly increased quantity of zinc residues from Kansas and Oklahoma zinc smelters. A flotation plant for the treatment of zinc-lead sulphide ores of the San Juan region was built and operated at the Durango smelter during the year. The copper matting plant at Ouray was idle. The United States Zinc Co.'s magnetic-wet concentration mill and smelter at Pueblo were actively operated on zinc-lead ores from Colorado and other western States. The western zinc oxide plant, at Leadville, was operated steadily. The Western Chemical Co.'s acid, magnetic separation, wet-concentration plant, at Denver, was operated steadily at increased capacity, as was the Empire Zinc Co.'s 200-ton magnetic separation plant, at Canon City, both treating chiefly Leadville zinc-lead sulphide ores. The old Rocky Mountain smelter, at Florence, was remodeled into a plant for the treatment of zinc-lead copper sulphide ores as an intermediate plant for the River Smelting and Refining Co.'s electrolytic smelter plant at Keokuk, Iowa, and large tonnages of sulphide ores were received from various Colorado counties. Copper ore, copper matte, and cyanide precipitates were shipped to the Omaha smelter, and some copper and lead ores were shipped to Utah plants.

The gold output of Cripple Creek (Teller

County) was \$11,800,000, a decrease of \$1,883,000. Development continued at lower depths with the continued gradual lowering of the water level as the Roosevelt drainage tunnel was advanced toward the Vindicator-Golden Cycle properties. Experimentation with the flotation process was continued by the Vindicator Company and the Portland Company for the treatment of low-grade mine and dump ore.

## Safety First.

Lock and test your safety lamp;  
Examine well for fire damp;  
Be sure your shots you do well tamp—  
"Safety First."

Look out for electric juice,  
And see the timbers are not loose,  
And beware the mule's caboose—  
"Safety First."

Never let your fancies roam;  
Never be "nobody home;"  
Keep a level-headed dome—  
Safety First."

There are no angels watching you,  
Good miners know that it is true  
That God helps those who think and do—  
"Safety First."

Don't indulge in any booze,  
And keep the car wheels off your shoes,  
And be liberal with the fuse—  
"Safety First."

Be sure the treacherous roof you test;  
Be careful where you sit to rest,  
At rib or prop is always best—  
"Safety First."

Always kick about the dust,  
For it can be wet, and must,  
Or some day the mine will "bust"—  
"Safety First."

If there's gas it's up to you;  
Don't light up and smoke a few,  
Or the mine may light up too—  
"Safety First."

Study up that first-aid fad,  
If you don't you'll wish you had,  
Some day you will need it bad—  
"Safety First."

K. H. CHISHOLM.

Copies of the Supreme Court opinion in the Minerals Separation case may be secured from the American Mining Congress, Munsey Building, Washington, D.C. Price 10 cents per copy.

# PRODUCTION OF MONTANA MINES APPROACHES \$150,000,000 MARK

**During 1916 the State's Mineral Output Increased 76 Per Cent over the Record-Breaking Figures of 1915—Copper Alone Sells for Nearly \$100,000,000**

The value of the output of gold, silver, copper, lead, and zinc from Montana mines in 1916 was over \$145,000,000, which is greater than that of any past yearly output and an increase over the previous year of over \$62,000,000, or nearly 76 per cent. There were notable increases as well as record outputs in the quantity of silver, copper, lead and zinc, but a decrease in gold output. These preliminary figures have been prepared by Victor C. Heikes, of the United States Geological Survey, Department of the Interior.

The mine output of gold was valued at \$4,635,000, a decrease of nearly 14 per cent from \$5,400,195 in 1915. Much gold came from the Scratch Gravel district and the Piegan-Gloster mine, in Lewis and Clark Counties, and from the Ruby Gulch and August, in Phillips County. The production of gold from ores milled was in several places less than in 1915, and even the gold output from siliceous ores smelted seems to be declining. The placer-gold output decreased, especially that from dredge operations, though sluicing was begun below Troy, in Lincoln County.

## INCREASE IN SILVER PRODUCTION

The mine output of silver in Montana increased from 14,378,437 ounces in 1915 to 16,686,000 ounces in 1916. The value, on account of better prices, increased from \$7,289,868 to \$10,979,000, or nearly 51 per cent. Most of this output came from ores and concentrates smelted, especially copper material, in which there was a great increase, but a considerable quantity also came from the lead and zinc concentrate mined at Butte, of which there was a larger production. Work was resumed at the Ophir mine by the Butte Detroit Copper and Zinc Co., and the mill was remodeled.

## HEAVY COPPER INCREASE

The mine production of copper, which is Montana's greatest asset, increased from 267,231,014 pounds in 1915 to 357,000,000 pounds in 1916, an increase of nearly 90,000,000 pounds. The increase in value was proportionately more, owing to the unusually high price—from \$46,765,427 to \$97,461,000, an increase of over 108 per cent. Everything was done at both the Anaconda smelters and that of the East Butte Co. to take advantage of the strong demand for copper, and at the same time important changes were in progress to improve the output and the saving. The Anaconda Co. was producing an average of 27,000,000 pounds of copper monthly, the East Butte Co., 1,500,000 pounds, and the North Butte Co., over 2,000,000

pounds. The Bullwhacker property made large shipments of siliceous copper ore. Wages at Butte were increased on a sliding scale, making a record pay roll. The Anaconda mines were reported to be producing in May 15,000 tons a day. Other producers were the Tuolumne, Davis Daly, and Butte Alex Scott, which was sold to the Anaconda Co. The Butte and Duluth leaching plant was again operated toward the end of the year. In Mineral County the Amador mine was again productive and a concentrator added.

## GOOD INCREASE IN LEAD

The mine output of lead increased from 13,756,356 pounds in 1915 to a new record of 16,933,000 pounds in 1916, a gain of over 3,000,000 pounds. The value of the output was nearly doubled, increasing from \$646,549 to over \$1,151,000 or 78 per cent. A great part of this output came from lead concentrates made from lead-zinc ore at Butte and from residues resulting from the smelting of zinc concentrates from the Butte district. Part of the lead output came from the Iron Mountain mine, in Mineral County, which was operated by the Federal Mining and Smelting Co., until August. A mill was constructed at the Banner & Bangle property, near Troy, to treat lead-zinc ore.

## TWENTY PER CENT INCREASE IN ZINC

The mine production of zinc increased from 187,146,895 pounds in 1915 to 227,000,000 pounds in 1916, an increase of nearly 40,000,000 pounds. In value the output increased from \$23,206,215 to \$31,099,000, or 34 per cent. The Butte and Superior Mining Co. was, as formerly, the greatest producer of zinc concentrates, shipping about 15,000 tons monthly for the first half of the year, according to the printed reports. The Elm Orly property, which is next in importance, also increased its zinc output, and large shipments were also from the Iron Mountain mine and from tailings concentrated at Basin. A considerable quantity of electrolytic zinc was made by the Anaconda Co., largely from ores mined at Butte. The construction of a large zinc electrolytic plant at Great Falls was progressing rapidly, and at the close of the year three units were complete. The plant is to have five units and will make an output of 6,000,000 pounds of zinc a month. A zinc concentration plant having a capacity of 2,000 tons was also constructed. About 233,000 tons of zinc concentrate and ore were shipped to eastern plants, aside from ore treated by the Anaconda Co.

The main dividend payers were the Anaconda Copper Co., and the Butte & Superior, but



smaller payments were made by the North Butte and Intermountain or Amador. The Barnes King and Kendall gold mines also paid dividends. The available figures show a total of dividends for the year of over \$26,000,000, but these figures are not yet complete.

### **GEOLOGISTS INJURE PROFESSION BY TELLING ONLY PART OF TRUTH**

That professional work on the part of geologists which involves testifying for a litigant in court is tending to lower the scientific standard of the profession, was declared by George Otis Smith, Director of the United States Geological Survey, in an address which was delivered before the Geological Society of America at its recent meeting in Albany, N. Y. Dr. Smith's conclusion is that it is a safety first measure to decline professional work of this type. He believes that the time is not distant when courts will summon their expert witnesses and compensate them for this service. This will mean, Dr. Smith declared, that the whole truth and not that part of the truth which favors one litigant, will be brought out.

The title of Dr. Smith's address is "Geology and Public Service." He made the appeal to American Geologists that they not only make their science more human, but that they humanize themselves. He stated his belief that the geologist is well qualified by special training not only to serve society in the capacity of a professional adviser but to take a larger part as a citizen.

### **HYDRAULIC FILLING MAY BE TRIED IN ILLINOIS MINES**

Under the cooperative agreement of the Bureau of Mines with the State of Illinois, investigations into mine subsidence and roof supports have been made. The problem is of great and increasing importance in Illinois, because so much of the coal underlies rich agricultural land, where subsidence results in ponds and marshes. In many cases drainage is reversed or destroyed. Damage has been caused in towns built above the mines. The problem is complicated by the fact that the value of the surface land ranges up to \$250 a acre, which is several times the value of the coal in places. The question of subsidence in Illinois is related to that of improved mining methods looking ultimately to the introduction of filling methods, such as hydraulic filling used so extensively in Germany.

#### **Coal Report Delayed**

Inability to secure the paper upon which maps are printed has resulted in a serious delay to the Geological Survey's coal report for 1915. Every effort has been made to secure this paper, but, owing to congestion at the mills, it was impossible to secure sufficient stock to go ahead with the report. By the time this reaches print the report will be available as follows:

Part A: Coal production.

Part B: Distribution and consumption.

### **MINING CONGRESS CHAPTER DEFEATS PROPOSED TAX AMENDMENT IN UTAH**

By A. G. MACKENZIE

Salt Lake City, December 12.—The proposed tax amendment of the Utah Constitution was defeated in November by the decisive vote of 55,079 to 14,958. Only seven of the twenty-eight counties of the State cast their votes in favor of the proposition.

One of the features of the proposed amendment was the taxation of net proceeds of mines at three times their value instead of their actual value as at present provided. Opposition to the amendment was led by the Utah Chapter, American Mining Congress, which conducted a vigorous educational campaign through newspapers and other channels.

### **HOMESTAKE MINE SHOWS AN INCREASE OVER LAST YEAR**

The production of gold from mines in South Dakota in 1915 was \$7,463,000, compared with \$7,406,305 in 1915 and that of silver was 209,000 ounces, compared with 199,864 ounces in 1915. A nominal quantity of lead was produced. These are preliminary estimates reported by Charles W. Henderson, of the United States Geological Survey, Department of the Interior.

The Homestake mine and amalgamation-cyanidation mills were operated continuously throughout the year with an increased output. All the other cyanidation mills in Lawrence County were operated steadily, with the exception of the Bismarck. During a part of the year the Deadwood-Standard cyanidation mill was also operated on ore from the Slavonia property. A small production of placer gold was made in Custer, Lawrence, and Pennington Counties. A small yield of lode gold was made from the Hill City district, Pennington County, and considerable development was done in the Keystone district and several small shipments were made.

### **SHIPMENTS OF PORTLAND CEMENT BREAK RECORD**

Shipments of Portland cement in the United States in 1916 approximated 94,508,000 barrels, an increase over 1915 of more than 750,000,000 barrels, the heaviest shipments in the history of the industry. Production, while it did not keep pace with shipments, reached a total of about 91,194,000 barrels, an increase of more than 5,000,000 barrels over 1915, while stocks fell off more than 3,000,000 barrels, according to estimates by Ernest F. Burchard of the United States Geological Survey, Department of the Interior. Prices averaged higher and trade conditions were generally better than in 1915, and the outlook for 1917 is reported as good.

# UTAH MINES SHOW AN INCREASE OF 77 PER CENT DURING THE YEAR

In Twelve Months of Notable Production the Mines of the State Produce Close to \$100,000,000 of Mineral Wealth—Steam Shovels at Bingham Produce Nearly 13,000,000 Tons of Ore

Utah mines will close the year 1916 with a record-breaking ore output of gold, silver, copper, lead, and zinc having a total value of about \$97,000,000, as estimated by Victor C. Heikes, of the United States Geological Survey, Department of the Interior. This report indicates an increase of nearly 77 per cent, or \$42,000,000 over the output of 1915. All the metals showed increases and there were record outputs of copper, lead, and zinc. About 14,000,000 tons of ore were mined in 1916, against 10,451,445 tons in 1915. The mines at Bingham produced the larger part of this ore, or nearly 13,000,000 tons, mostly by steam shovel mining. This quantity includes about 12,000,000 tons of porphyry copper ore, the output of which in 1915 amounted to 8,908,567 tons. In all districts many of the old mine and tailing dumps were reworked or shipped directly to the smelters. Ore shipments from the Tintic district totaled about 400,000 tons, representing an increase of 36 per cent over 1915. The estimate includes a quantity of oxidized iron ore greater than that shipped in any previous year, caused by the demand for flux at the different smelters. Several thousand tons of ore and old dump material that are not included in the estimate were milled in the district. In the Cottonwood and American Fork districts over 47,000 tons of ore of shipping grade was produced in 1916. Nearly half the output was hauled by wagon and tractor engines down Big Cottonwood Canyon to the valley furnaces. The Park City region produced less milling ore and more ore of shipping grade, which, with concentrates from three ore mills and two large tailing plants, amounted to nearly 90,000 tons, a decrease of about 7,500 tons from the output of 1915. In 1916 two new mills were erected at Frisco and Newhouse, in Beaver County, to work tailing yielding copper, lead, and zinc concentrates, which, with the ore shipped from the different mines, aggregated 65,000 tons. This is an increase of more than 46,000 tons over 1915. The ore output in Tooele County, principally at Ophir and the Stockton camps, including the smaller districts, North Tintic, Columbia, Dugway, and Erickson, amounted to 126,000 tons. This included the milling ore of the Ophir and Bullion Coalition properties. There was an increase of 14,000 tons of ore compared with 1915.

## SOME INCREASE IN GOLD AND SILVER

The gold output of Utah shows a slight increase, from \$3,609,109 in 1915 to \$3,647,000 in 1916. Most of the increase is probably de-

rived from copper ores, as the gold-producing districts were not very active. Bull Valley, Sheep Rock, Annie Laurie, and West Mercur mines each produced a little gold bullion. The placer gold production in the State is negligible.

The production of silver is 8 per cent greater, increasing from 12,313,205 ounces in 1915 to 13,357,000 ounces in 1916, amounting to an increase in value of over \$2,500,000. Among the silver mines the Ontario was producing ore of shipping grade, and a large increase may be made from the Cottonwood districts. In the Tintic district, silver ores will benefit by the chloridizing-roasting process, which was put in successful operation, treating ore and old dump material from the Iron Blossom, Dragon, Swansea, and Black Jack mines. Precipitates containing high silver were produced and averaged a car a month before the increase of 100 to 300 tons in the roasting capacity of the plant.

## SANTA FE GOES MORE THAN HALF WAY IN TRYING TO DISTRIBUTE FREIGHT CARS

Shippers in the West, in letters to Washington, are commending the unselfish action of the Atchison, Topeka and Santa Fe Railroad in its determined effort to return all empties as quickly as possible to home roads. Solid trains of empty cars were made up and hurried to connecting lines. An honest effort was made to comply with the request that cars be returned at the earliest possible moment. This plan resulted unfortunately for the Santa Fe, because connecting lines failed to exercise the same unselfish policy and, as a result, the Santa Fe was caught very short of cars and found it impossible almost to secure the return of its own equipment in anything like the time that they were returning the equipment of other lines.

Regardless of the fact that numerous shippers have suffered in consequence, the Santa Fe's system-wide effort is being commended very generally and has brought forth favorable comment from Government officials.

After a rehearing by the Interstate Commerce Commission, the Huerfano Coal Company has been sustained in its claim that the trackage contract between the Colorado and Southern and the Colorado and Southeastern Railroads causes an unlawful discrimination against the Coal Company in the matter of car supply.



# NEW MEXICO INCREASES ITS MINERAL OUTPUT BY 74 PER CENT IN 1916

An Increase of Nearly 15,000,000 Pounds in the Amount of Copper Mined as Compared with 1915 is Registered—Year's Output from State's Mines Sells for \$34,000,000

The output of New Mexico mines for eleven months of 1916, with an estimate for December, as reported by the United States Geological Survey, Department of the Interior, indicates a yield of \$1,350,000 in gold, 1,800,000 ounces of silver, 7,100,000 pounds of lead, 91,400,000 pounds of copper, and 36,500,000 pounds of zinc (in terms of spelter and zinc in leaded-zinc oxide), valued in all at \$33,469,400 as compared with \$1,461,105 in gold, 2,005,531 ounces of silver, 4,542,361 pounds of lead, 76,788,366 pounds of copper, and 25,404,064 pounds of zinc, valued in all at \$19,279,468 in 1915. These preliminary figures compiled by Charles W. Henderson show decreases of \$111,105 in gold and of 205,531 ounces of silver; but increases of \$167,596 in value of silver; 14,611,634 pounds in quantity and \$11,514,236 in value of copper; 2,577,639 pounds in quantity and \$269,309 in value of lead; and 11,095,936 pounds in quantity and \$2,349,896 in value of zinc. The total value of the five metals increased \$14,190,000, or nearly 74 per cent.

The Mogollon district, Socorro County (reached at present from the railroad at Silver City, Grant County (80 miles distant), continued to be the most productive district in New Mexico in output of gold and silver. There was a great deal of new development work in this district in 1916, but the yield decreased appreciably. The Socorro (Fanney) and the Mogollon (Ernestine) mines and mills were active. All the ore was milled in the district by concentration, sliming, and agitation and percolation in cyanide solution, the bulk of the product being cyanide precipitates, the balance being high-grade gold-silver concentrates. The Elizabethtown district, Colfax County, from the Aztec mine alone, was also a very large producer of metallic gold, gold bullion, and gold concentrates.

The Cossak cyanidation mill, in the Cochiti (Bland) district, Sandoval County, closed in December, 1915, was started up again in the spring of 1916 and contributed a considerable yield of silver-gold bullion. Gold bullion continued to be produced at the amalgamation mill on the North and South Homestake mines, at Whiteoaks, Lincoln County. The Lordsburg district, Grant County, which has been steadily increasing its shipments of siliceous gold and silver bearing copper and dry ores, again greatly increased its tonnage shipped. The copper concentrates of the Chino Copper Co., containing as they do small quantities of gold, contributed to the gold yield. The continued activity of the mines and matte smelter at San Pedro, Santa Fe County, also added an increased quan-

tity of gold to the New Mexico yield. Shipments of copper ores from the Jarilla district, Otero County, carried some gold.

The principal metal produced in New Mexico is copper, and since 1910 the yield has been chiefly from the Chino Copper Co.'s low-grade copper deposits at Santa Rita. The ore is milled at Hurley in a large wet-concentration flotation plant. During 1916 the largest tonnage in the history of the company was treated and the gross output was 75,500,000 pounds. The Burro Mountain Copper Co.'s new concentrator began operations in April and started running at full capacity June 1, 1916. Much development work has been done at this property and the reserves are sufficient to supply the mill for years. The Santa Fe Gold & Copper Co.'s 125-ton matting plant, at San Pedro, added a considerable quantity of copper to the output. Copper ores were also shipped from the Organ Mountains district, Dona Ana County, where the Phelps-Dodge Co. has secured a large area which it has been developing during 1916. This district will produce all five metals. A large tonnage of low-grade copper ore with calcite gangue was shipped from the Apache mine, Hachita.

The yield of lead showed an appreciable increase. Lead ores were shipped from the Central, San Simon, and Pinos Altos districts, Grant County, and Cooks Peak and Victorio districts, Luna County. Considerable tonnages of lead carbonate ore were shipped from Kelly, Socorro County.

Increased shipments of zinc carbonate and sulphide ores and zinc sulphide were made in New Mexico in 1916. At Kelly, Socorro County, the principal producing mines were the Kelly, Graphic, and Juanita. The Ozark mill was operated continuously up to the time of the fire in August. The Kelly magnetic mill was operated from May throughout the year. At Hanover, zinc carbonate ores were shipped from the Hanover mines and others, and from June on, zinc sulphide concentrates were shipped from the Hanover magnetic separation mill. The Cleveland magnetic separation mill, at Pinos Altos, was operated steadily. A mill was erected in the revived Steeplerock district, Grant County, and some shipments were made. Zinc carbonate ores were shipped from the Magdalena, Hanover, Cooks Peak, Florida Mountains, Tres Hermanas, and Pinos Altos districts. Shipments of zinc ore and concentrates from New Mexico were 73,900 tons of 30.15 per cent grade, as compared with 41,852 tons of 36 per cent in 1915.



## NAVY DEPARTMENT BALKS OIL LAND COMPROMISE

Efforts of the joint public lands committee to provide relief for the claimants of naval oil reserve lands in California were practically ended by the refusal of the Navy Department, through Secretary Daniels, to yield to compromise proposals.

Secretary Daniels in declining the proposals stated the Navy Department stood upon its strict legal rights and was opposed to any legislation for claimants to unpatented lands within the naval reserves.

The statement made by Navy Department officials that the bill would cripple the navy was denied emphatically by advocates of the proposed legislation. Records were produced showing the oil needs of the navy to be 1,000,000 barrels annually. An estimated increase for the next ten years would place the need at 12,000,000 barrels, with the necessity of a reserve of about 25,000,000 barrels.

The proposal made by the joint committee with respect to legislation for the relief of the California claimants would eliminate from the effect of the pending leasing bill, all railroad lands and other patented lands in the naval oil reserve and all claims in which any charges of fraud had been made.

It also would grant preferential leases only to claimants of unpatented lands, and who had initiated their rights prior to the first government withdrawal order in September, 1909, and who had prosecuted their claims in good faith to the discovery of oil, all royalties to go to the navy.

The other proposal, submitted by Commissioner Tolman, of the land office, would grant preferential leases to claimants of unpatented lands applying for patents in the same reserves, and who had in good faith prosecuted the work of the production of oil and were actually producing oil, upon the relinquishment of all other claims of title and upon payments to the government of back royalties upon oil heretofore extracted, all other royalties to go to the navy.

"The proposal of the committee," said Senator Pittman after the conference had failed, "was for the least possible remedial legislation for private claimants. The position of the Navy Department has been that to give this relief would cripple the navy. I do not think that it would. Assistant Secretary Roosevelt said the navy requirement at the present time was 1,000,000 barrels a year; that in ten or twelve years the requirement would be 12,000,000 barrels annually, and that there always should be about 25,000,000 barrels in reserve for war emergencies.

"In the three big naval oil reserves there are estimated to be 339,000,000 barrels of oil, and the government has shale land withdrawals in which there are reported to be 1,000,000,000 barrels of oil."

It is admitted that the people who took

up the claims which are now in controversy acted in entire good faith. Not only did the President doubt his right to withdraw them, but the best possible legal advice indicated that he was without that right. It was held that persons who had taken claims before the withdrawal, and "with due diligence" prosecuted their development work, should receive patents. But the question of "due diligence" has proved a large and difficult one. The lands are in a region where water is only to be had at large expense, requiring establishment of facilities to pipe it in from long distances.

Some of the big concerns, backed by unlimited capital, were able to bring water promptly and continue development; others, with less means, were compelled to devote all energies to solving the water problem, and while they were bringing in water they could not do other work on the claims. Did they lapse from "due diligence" during the period when they were building water plants that were absolutely necessary to make development possible? They insist that they did not, and the equities of the matter seem to be impressing Congress, more and more, that they did not.

Chester Rowell, Republican national committeeman from California, who has been in Washington recently, and who has no possible interest in this controversy aside from a wish that justice should be done, emphatically declared that there was no division of opinion in his State about the justice of granting relief through legislation that would permit the claimants to proceed with their work. They have invested, in the aggregate, immense sums, ranging, it is said, into the millions, which are jeopardized and will be lost if relief is not granted.

The most insistent demand for some relief comes from men who understand the geological and technical problems of getting oil out of the earth. After an oil field is opened up, it is not possible to close it again without great loss of the oil. The danger in the present case is that the field will be ruined unless development is permitted to be continued, because many borings have been made.

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## IRON REGION LIKELY TO GET EXPERIMENT STATION NEXT

Speculation as to the work which will be undertaken by the three mining experiment stations which will be appropriated for at the present session of Congress is being indulged in. The chances apparently favor the location of one of these stations in an iron mining district. Thus far ferro-metallurgy has received only incidental attention from the Bureau of Mines. Another of the stations possibly may be devoted to a study of petroleum, while the third seems most likely to be devoted to the ceramic industries.



# MINES OF ALASKA SHOW INCREASE OF 54 PER CENT DURING THE YEAR

**Territory Which Cost the United States \$7,000,000 Has Produced Since Its Purchase \$351,000,000 in Mineral Wealth—Value of Copper Output in 1916 Double That of Gold**

Minerals valued at \$50,900,000 were taken from Alaskan mines in 1916. These are the advance figures issued by the United States Geological Survey, and are based on estimates made by Alfred H. Brooks. The output of Alaska mines in 1915, which was greater than that of any previous year, had a value of \$32,850,000, and the increase in 1916 was therefore over 54 per cent. It was the product of the copper mines that so greatly swelled the mineral production of the year. This amounted to 120,850,000 pounds, valued at \$32,400,000. There was also, however, an increase in gold output, which in 1916 was \$17,050,000 and in 1915 was \$16,700,000. Of the gold produced in 1916, \$10,640,000 is to be credited to the placer mines. Alaska also produced in 1916 silver, lead, tin, antimony, tungsten, petroleum, marble, gypsum, and coal to the value of \$1,300,000. During thirty-two years of mining Alaska has produced \$351,000,000 in gold, silver, copper, and other minerals. Of this amount \$278,000,000 represents the value of the gold, and \$68,000,000 that of the copper. Although this enormous increase in output was in large measure due to the large tonnage and high price of copper, yet nearly all other minerals were produced in greater quantities than in the previous year. During thirty-two years of mining Alaska has produced over \$351,000,000 worth of gold, silver, copper, and other minerals.

It cannot be expected that Alaska will continue to produce so much mineral wealth each year, yet the large amount of preparation made in 1916 for lode and placer mining and the development of the coal-mining industry, now assured, give promise of a continuous healthy growth of the mining industry of the Territory. This is especially true of the Pacific coast region and of the territory served by railroads built or under construction.

The Alaska mines are believed to have produced gold to the value of about \$17,050,000 in 1916, compared with \$16,700,000 in 1915. This makes the total value of the gold mined in the Territory about \$277,900,000, of which some \$196,800,000 has been won from the placers. In 1916 about 120,850,000 pounds of copper was produced in Alaska, valued at about \$32,400,000. The production of 1915 was 86,500,000 pounds, valued at \$15,100,000. The total copper production to date is 340,700,000 pounds, valued at \$68,300,000.

The value of Alaska's lesser mineral products in 1916 was about as follows: Silver, \$950,000; tin, \$120,000; lead, \$110,000; antimony, \$60,000;

tungsten, \$50,000; coal, \$30,000; petroleum, marble, gypsum, etc., \$130,000.

## GOLD PLACER MINING

The data in hand indicate that the value of the placer gold output in 1916 was \$10,640,000; in 1915 it was \$10,480,000. About 640 placer mines were operated in 1916, employing some 4,600 men. All the older districts appear to have held up or increased their output compared with the previous year, except Fairbanks. The increased output is however, to be credited chiefly to the new camps of Marshall and Tolovana. Thirty-six gold dredges were operated in Alaska in 1916, one more than in 1915—twenty-nine in Seward Peninsula, three in the Iditarod, and one each in the Ruby, Fairbanks, Circle, and Yentna districts. Of these thirty-six dredges, four were installed in 1916. It is estimated that these dredges produced between \$2,000,000 and \$2,200,000 worth of gold. If the final figures bear out this estimate, it indicates a lower recovery per dredge than in the previous year. In 1915 the thirty-five dredges mined \$2,330,000 worth of gold.

## GOLD-LODE MINING

About twenty-five gold-lode mines were operated in 1916, compared with twenty-eight in 1915. The value of this gold output increased from \$6,069,000 in 1915 to about \$6,200,000 in 1916. Southeastern Alaska, especially the Juneau district, is still the only center of large quartz-mining developments in the territory. Next in importance is the Willow Creek lode district. There was also considerable gold-lode mining on Price William Sound, but a very decided falling off of this industry in the Fairbanks district. Lode-mine owners of Fairbanks are awaiting the cheapening of operating costs, especially of fuel, which will be brought about by the Government railroad.

## COPPER MINING

The enormous copper output from Alaska mines in 1916 has already been referred to. During the year eighteen copper mines were operated, compared with thirteen in 1915—seven in the Ketchikan district, eight in the Prince William Sound district, and three in the Chitina district. The enormous output from the Kennicott mine, in the Chitina district, overshadowed all other operations. Had the transportation companies and smelters been able to handle the ore, however, many of the smaller copper mines would have made a much greater output. It is estimated that about 550,000 tons of copper ore was hoisted in 1916.

## TIN MINING

About 232 tons of stream tin was produced in Alaska in 1916. Of this about 162 tons came from the York district, where two tin dredges were operated and a third was working on placer ground carrying both tin and gold. Developments were also continued on the Lost River lode-tin mine. The rest of the concentrates were recovered incidentally to placer-gold mining in the Hot Springs district of the lower Tanana basin.

## ANTIMONY MINING

The mining of antimony ore (stibnite) began in Alaska in 1915 and continued in a small way through the first half of 1916. The fall in the price of antimony during midsummer put an end to most of these operations. About 1,460 tons of crude ore was mined and shipped during 1916. Much the larger part of this came from the Fairbanks district.

## TUNGSTEN MINING

Though scheelite has long been known to occur in some of the Alaska placers, up to the last two years the demand for it has not been sufficient to encourage its recovery. The recent high price of tungsten has induced Alaska miners to turn their attention to scheelite deposits. In the fall of 1915 a scheelite-bearing vein was discovered in the Fairbanks district, and its development began. Later two other scheelite-bearing veins were found in the same district. During the winter some of these scheelite ores were treated in a local mill, and the concentrates were shipped out by parcel post. Scheelite mining was continued during the summer, and the crude ore was shipped out by steamer. Considerable scheelite was also recovered from some of the gold placers at Nome, and a little was produced in other districts. It is estimated that about 50 tons of scheelite concentrates were produced in Alaska during 1916, for which the producers received over \$50,000.

## MINERAL FUELS

The production of petroleum from the only oil claims patented in Alaska, in the Katalla district, continued in 1916. The operating company was reorganized and more extensive exploitation was undertaken.

About 8,000 tons of coal was mined in Alaska during 1916 from half a dozen small mines. The largest producer was the Bluff Point mine, on Cook Inlet, where a lignite bed was exploited for the local market. The mining of coal in the lower end of the Matanuska field, for the use of the Alaska Engineering Commission, was also a significant event. This part of the field is already made accessible by the Government railroad, now under construction. The construction of a private railroad from Bering River into the Bering River coal field was also begun, and a little coal was mined at the southwest end of the Bering River field. Tenders for leases of coal lands in both the Bering River and Matanuska coal fields under the new law have

been received by the Interior Department. Another important event was the completion by the Geological Survey of a detailed examination of the more accessible part of the Nenana coal field, lying about 60 miles south of Fairbanks. All these facts indicate that systematic exploitation of the Alaska coal fields will soon be undertaken.

## DENVER COMPANY TREATS LIGNITES SUCCESSFULLY

The treatment of lignite coal by the American Coal Refining Company at Denver has proven so successful that C. E. Leshner of the U. S. Geological Survey is of the opinion that it will have an important bearing on the development of the vast lignite fields of the United States. By extending the by-product principle of coke making to the lignite of northern Colorado, it has been possible to recover valuable tars and oils as well as a residue which is practically the equivalent of anthracite in composition. The larger sizes of this product are sold in direct competition with anthracite, while the dust and fine sizes are being briquetted.

One of the important products of this process is a flotation oil which is in great demand. This feature of the business alone Mr. Leshner regards as a very important one. The whole plan is characterized by Mr. Leshner as being real progress in conservation. After looking over the plant he pronounced it a mechanical success.

"I can see no reason," declares Mr. Leshner, "why this process should not be applicable to any of the deposits of black lignite in the West and possibly may be applied successfully to the brown lignites of North Dakota and eastern Montana."

## COAL MINING INSTITUTE HAS SUCCESSFUL MEETING

The annual meeting and banquet of the Coal Mining Institute of America, held at Pittsburgh, recently, was more largely attended than previous meetings. Much encouragement was given the officers as to the success of its work.

W. L. Affelder was elected president; W. E. Fohl, first vice-president; Dr. W. E. Crane, second vice-president; F. W. Cunningham, third vice-president; H. D. Mason, secretary and treasurer.

Many interesting addresses were made. Among the speakers were Van H. Manning, director of the U. S. Bureau of Mines; S. C. Jones, of the du Pont Powder Company; L. B. Smith; James F. Callbreath, secretary of the American Mining Congress and J. T. Jennings, of the P. & R. Coal and Iron Co.

Copies of the Supreme Court opinion in the Minerals Separation case may be secured from the American Mining Congress, Munsey Building, Washington, D. C. Price 10 cents per copy.



### JOPLIN AND MONTANA ZINC PROPERTIES INCREASE THEIR OUTPUTS DURING THE YEAR

The zinc-mining and zinc-smelting industries experienced a year of prosperity in 1916. According to the best information available at this time the recoverable zinc content of ore mined in the United States was about 708,000 tons, compared with 605,915 tons in 1915 and 406,959 tons in 1914. The largest district gain was made by the Joplin region, which had an increase of over 40,000 tons. Montana made a notable gain and from the returns available seems to have taken second place, but it will require complete figures to decide. Good gains were also made by the upper Mississippi Valley region, Colorado, Tennessee, Idaho, Nevada, New Mexico, New York, Arkansas, and Washington. The Eastern States produced 148,000 tons, or 21 per cent, the Central States 274,000 tons or 39 per cent, and the Western States 286,000 tons, or 40 per cent, of the total output of zinc in ore.

The following figures have been compiled without change by C. E. Siebenthal, of the United States Geological Survey, Department of the Interior, from reports furnished by all operating smelters of zinc ores except one small plant, showing their output for the first 11 months of the year and their estimated output for December. The production of the smelter not reporting, which operated intermittently, has been estimated on the basis of its output for the first half of the year. Figures showing the imports and exports for 10 or 11 months were obtained from the Bureau of Foreign and Domestic Commerce, and to these figures have been added estimates for the remainder of the year.

#### INCREASE IN CAPACITY

There was much activity in the construction of retort zinc smelters during 1916, and considerable additions are under construction or planned for 1917. The number of retorts at the beginning of 1916 was 156,568, on July 1 it was 196,640, and at the end of the year it was 213,840, besides 13,648 additional retorts being built or planned. The Athletic Mining & Smelting Co. is building a smelter of 2,400 retorts at Fort Smith, Ark., to be completed in March, 1917. The United Zinc Smelting Corporation is building a smelter to have 6,912 retorts at Moundsville, W. Va., which will be completed early in the year. Additions are under way at Pueblo, Colo.; Peru and East St. Louis, Ill.; and Blackwell, Quinton, and Sand Springs, Okla. The Berger Manufacturing Co., of Canton, Ohio, completed plans for a smelter at Fort Smith, Ark., but the construction is yet in abeyance.

The full retort capacity was not utilized in smelting ore at any time during the year.

A large number of retorts were occupied in redistilling prime western spelter. Many retorts were idle during parts of the third and fourth quarters of the year, but started up again late in the year, though a considerable number were still idle in December.

Two new smelters using large graphite retorts were built during 1916. These were the plants of the Eastern Zinc Refining Co. at Brooklyn, N. Y., with 8 large retorts and 16 more under construction or planned, and of the M. Mooshowitz & Son Metal Co. at Trenton, N. J., with 21 retorts. There are now five such plants, with 153 retorts.

Six electrolytic zinc plants were in operation in 1916. Four units of the large Anaconda plant at Great Falls, Mont., went into operation, and it is thought that the last unit will be completed about the first of 1917. The small Anaconda electrolytic plant at Anaconda, Mont., has been dismantled. The plant of the River Smelting & Refining Co. at Keokuk, Iowa, was active, and experiments were continued at the Bully Hill plant in California. The electrolytic zinc plant of the Judge Mining & Smelting Co., at Park City, Utah, and that of the Mammoth Copper Co., at Kennett, Cal., will be ready for operation by the middle of 1917. The Murray experimental plant of the American Smelting & Refining Co. is closed, and plans for a larger plant are abandoned for the present at least.

#### RECORD PRODUCTION

The production of spelter from domestic ore in 1916 is estimated at 553,000 short tons, worth, at the average St. Louis price, about \$150,000,000, and from foreign ore at 105,000 tons, a total of 658,000 tons, worth \$180,000,000, compared to a total of 489,519 tons in 1915 (458,135 tons of domestic origin, and 31,384 tons of foreign origin), worth \$121,400,000 at the average St. Louis price. This was a gain of 169,000 tons in quantity and an indicated gain of more than \$58,600,000 in value. The actual gain in value, however, was considerably less because much of the spelter was sold for future delivery at prices from 1 to 2 cents below the quotations for immediate delivery. Included in the output are 11,878 tons of electrolytic spelter, of which a part was refined by electrolysis from prime western spelter. The output of zinc dust was about 2,500 tons, compared with 1,755 tons in 1915.

The output of secondary spelter redistilled at regular smelters and at the smelters with large retorts was about 32,000 tons. It is probable that the output of remelted spelter was not less than that of the preceding year, 23,000 tons, which would give a total of 55,000 tons of secondary spelter. Adding this to the production of primary spelter gives a grand total of 713,000 tons of spelter made in the United States in 1916.



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## CALIFORNIA MINES SHOW INCREASE OF 38 PER CENT

The mines of California made an output in gold, silver, copper, lead, and zinc valued in all at \$44,384,000 in 1916 compared with \$32,263,844 in 1915, according to preliminary figures compiled by Charles G. Yale, of the United States Geological Survey, Department of the Interior. This is an increase of \$12,120,000, or 38 per cent.

The mine figures for gold in 1915 were \$22,442,296. The estimates for 1916 indicate an output of \$22,939,000 in gold, an increase of \$497,000. The gold yield is the largest in 33 years. There are over 600 productive metal mines in the State, about evenly divided in number between deep and placer properties. From the deep mines the annual output of ore now exceeds 3,000,000 tons. In value of all metals produced, Shasta is the leading county; and in value of gold output Amador County.

The placer mines of the State continue to produce about 38 per cent of the annual gold yield. The gold dredges account for 35 per cent of the total gold yield, or 90 per cent of the placer gold yield. There are 59 dredges at work in the different fields, the most productive of which are in Yuba, Sacramento and Butte counties. One dredge recently launched has 18 cubic foot buckets and will handle 350,000 cubic yards monthly, digging to a depth below water level of 87 feet. In the Yuba River or Marysville field thus far in 1916 the yield of the gravel has been 12.87 cents to the cubic yard, at a working cost of 3.7 cents. Dredging is going on at the rate of 150,000,000 cubic yards a year. New machines have been installed in 1916 at several places in what are known as the outside districts, but these are generally

of smaller capacity than those in use in the larger fields.

Renewed activity has been shown in all branches of metal mining in the State. All the older quartz mines are very active and a number of new ones have been opened. There is also an apparent tendency to renew drift-mining operations at several points.

The silver output from the mines in 1916 is estimated at 2,186,500 ounces, valued at \$1,438,700, an increase compared with 1915, of 508,000 ounces in quantity, and of \$588,000, or 69 per cent, in value. The silver is derived mainly from the smelting of copper, lead, and zinc ores, although some silver is recovered also in gold-mining operations.

The estimated mine yield of copper in 1916 is 62,630,000 pounds, valued at \$17,097,990, compared with 40,751,625 pounds in 1915, an increase for 1916 of 21,878,000 pounds in quantity and of \$9,966,000, or 140 per cent, in value. Shasta County was the largest producer, but considerable copper was also produced in Calaveras, Placer, and other counties. The high price of the metal has resulted in the opening of a number of new properties in the State.

The mine output of lead in 1915 was 4,579,245 pounds, valued at \$215,225; the estimated yield for 1916 is 13,755,000 pounds, valued at \$935,340, an increase in 1916 of 9,176,000 pounds, and of \$720,000, or 335 per cent, in value. Most of the output comes from Inyo, San Bernardino, and other southern counties.

The estimated zinc output in 1916 is 14,400,000 pounds, valued at \$1,972,800, which is an increase of 1,306,000 pounds in quantity and of \$349,140, or 22 per cent, in value, compared with 1915. The zinc is all derived from Shasta and Inyo counties.

## BAUXITE OPERATORS EXPECTED TO PROFIT BY ADVENT OF INDEPENDENT BUYERS OF ORE

Independent buyers have entered the field for bauxite. This means that those mining this mineral will have real competition in the purchase of their product for the first time. So far as can be ascertained the only market for bauxite, until recently, was with companies, all of which are allied. When aluminum was selling at 20 cents it was understood that a good profit was made by the refiners. Now that the price is as high as 65 cents, the margin of profit has increased, it is believed, as the price being paid for ores has not advanced in the same proportion as the price of sheet aluminum.

## Gets Out New Catalogue

The Denver Quartz Mill and Crusher Company has just issued an attractive catalogue, showing the working of their crushing machinery. It carries a price list. The cut on the front cover shows the Cresson vug—the richest vug ever discovered.



# FIELD BEING COVERED BY MINING CONGRESS JOURNAL IS OUTLINED

By Publishing in Detail the Great Work Being Done by the Government the Official Organ of the American Mining Congress is Providing a Service for its Members Which is not Furnished Elsewhere

Due to the fact that only a few of the members of the American Mining Congress could be present at the members' meeting which was held at the Chicago convention, an extract from the proceedings, which is about to follow, is given to inform the membership more generally of the efforts being made to serve the mining industry by issuing a monthly publication.

During the members' meeting the news editor of the JOURNAL was called upon to make some statement with reference to his work. The statement was not intended to be comprehensive but it brings out some of the features of the JOURNAL and at any rate it is a portion of the proceedings to which the attention of the membership is called.

The extract, which will be a part of the permanent record of the convention, is as follows:

Mr. Paul Wooton: There is great pleasure, Mr. President, in writing for such appreciative readers as are the members of the American Mining Congress. So many of you have gone to the trouble of sending us letters saying nice things about the JOURNAL that I want to take this opportunity of thanking you collectively. I want to thank Mr. Morrison, specifically, for his very kind tribute tonight. It makes our work worth while.

I am the News Editor of the JOURNAL. Mr. Callbreath looks after the writing of the editorials and I try to handle the news end. I am a newspaper man, having been in that business nearly all of my life. I am at present Washington Correspondent of the New Orleans Times Picayune, in addition to this work I am doing for the MINING CONGRESS JOURNAL. I pointed out to Mr. Callbreath, a year and a half ago, that the mining industry was one of the few industries not paying close attention to the news developing in Washington. He thought we could develop the JOURNAL so as to supply this need. We have gone ahead with that end in view. We are paying particular attention, as all those who read the JOURNAL know, to the vast amount of work the Government is doing in behalf of mining. The Government spends \$60,000,000 a year in scientific and technical work. Of course, much of this expenditure has no direct bearing on mining, but a considerable portion of it is used for purposes having some bearing on mining. It seems to me that with such a large amount of money being spent in behalf of the miners, either directly or indirectly, this news ought to go promptly to those engaged in mining.

The JOURNAL is not a competitor of the technical mining papers. As most of them are really engineering papers, their greatest interest is in the engineering side of mining. They print some Washington news but it is in very condensed form and it is hardly adequate, it seems to me. The mining industry, until this JOURNAL was established, had less opportunity to read Washington news than did any other industry of importance. The lumber papers offer a good example. One lumber paper, with which I am familiar, prints eight pages of Washington news weekly. That compares with a very few paragraphs in the mining papers devoted to Washington news. But, as I say, the mining trade papers are largely devoted to engineering problems and technical news. Therefore, the JOURNAL hardly can be considered a competitor of other mining papers. The fact is they are mutually helpful.

I believe it has been the experience of newspapers generally that it takes a couple of years, or even more, to get them on a paying basis. With trade papers I think it takes longer. Of course, the JOURNAL carries no market quotations. The need for the JOURNAL, therefore, it is not

so apparent as for publications carrying information for which there is a pressing demand. Therefore, the JOURNAL will be a little slower, I think, in reaching a profit-earning point than the average trade paper.

We have not had the support we should have had from some of the manufacturers of mining machinery, and other advertisers, it seems to me. At the same time I realize they have to be conservative in going into new publications. I believe as they come to understand that our paper is being read and as they learn that users of mining machinery are interested in the JOURNAL, more of them will use our columns.

If there is any question that anyone would like to ask about the JOURNAL I would be glad to answer it, if I can.

Mr. Morrison: I would like to ask what method of solicitation for advertising do you use? Here is a publication that goes to every coal operator directing mines. It ought to be the best medium for advertisers of any in the field.

Mr. Paul Wooton: I have no connection with the business management of the JOURNAL, but I know in a general way what is being done in regard to advertising. We feel that our circulation is among the very best customers the advertisers could wish for and we think that they will come to realize this. We have been a little unfortunate in advertising men. A good advertising man is hard to get. We have tried out a number of men. It resolved itself into trying to find the proper man. We have had to pick out the most likely applicants. In that way we have been put to considerable expense. Men would go out and would not get returns and their expenses, of course, would be lost without any return to us. However, we think we have been very fortunate recently in securing a Chicago company to look after the advertising, and I believe that the advertising from now on is going to meet nearly all the expenses of the publication. Mr. Callbreath can tell you something more about that.

Mr. Morrison: I suggest that you write me a letter and tell me what the rates are. I know three companies that are likely advertisers and I will undertake to get one of them.

Mr. Paul Wooton: That is very kind of you, sir.

Mr. Morrison: I believe you have the best medium for advertising there is in the field. That is my opinion of it.

Mr. Paul Wooton: I am glad to hear you say so.

Mr. Morrison: I am going to see these three people about it and let them know about it and I will leave it to you to write me to remind me of it and to give me some information.

Mr. Paul Wooton: I will certainly do that.

Mr. Morrison: I will get one of them anyway.

Mr. Paul Wooton: Under present conditions we are not justified in hiring anyone to help me gather the news, but as it is we get most of the mining news in Washington. We watch Congress very carefully. Anything of interest to the mining industry is certain to come to our attention. Through daily contact with members of Congress we usually learn in advance of any legislation that is being contemplated. Then we cover the Geological Survey and the Bureau of Mines in detail. Incidentally I lost one of my good news sources when Mr. Parker went to the Anthracite Information Bureau. Very little happens in the Geological Survey or the Bureau of Mines that is of interest to the mining industry that is not available for publication. Then there is the Land Office, which develops a good deal of news, the Board of Appeals of the Interior Department, the Patent Office and the Interstate Commerce Commission and other Bureaus.

At the Interstate Commerce Commission I am told that it is not understood why it is that the mining industry files so few complaints. The lumbermen have weeded out most of their rate inequalities. They have filed complaint after complaint until they have their rates very well adjusted. Since the mining industry has so very few complaints it is wondered whether it is due to the fact that



the miners are perfectly satisfied with their rates, meaning that there are no unjust discriminations against the movement of ore and coal or whether the miners are not paying attention to their traffic situation. I am rather of the opinion, from other information that I have received, that there are many discriminations on rates on mineral products that should be taken up. I know that some of the coal companies have taken up rate matters quite in detail, but I think many operators neglect their traffic questions. By publishing traffic news pertaining to the mining industry some may be reminded to straighten up their own rates.

Then there is the Treasury Department. The Customs Division and the Bureau of the Mint and other Bureaus develop some news.

The Department of Commerce is gathering a huge volume of valuable statistics. It receives many reports from foreign countries where mining is conducted.

There is a world of information in Washington and we could devote very profitably some more space to it, but we have been limited, of course, by the lack of money.

Mr. Morrison: I think, Mr. President, that the field is very well covered, but there are other sources of information which I think should be taken care of. I think a good deal more emphasis should be put on customs decisions on ores that are coming into our country.

Mr. Paul Wooton: Yes, sir, I think that could be done very profitably.

Mr. Morrison: There was a very fine question just decided by the Board of Appraisers. If you could cover those things everybody using or dealing in ores would know about it. I think the Bureau of Standards, which has not been mentioned.—

Mr. Paul Wooton: Yes, we keep an eye on the Bureau of Standards.

Mr. Morrison: —should be a source of information. I think the Forest Service of the Department of Agriculture, with all of its withdrawals, should be a source of information. I think there is in this country a growing interest in the affairs at Washington, not only on the part of individuals, but on the part of associations like the one I am connected with. I find that we have rather ramified interests. Now, the advance information of the intended publication of a document by the Bureau of Mines, which I get, is immediately answered by an inquiry to the Bureau of Mines to list me for that document, so that the moment it is out I get it. If I did not have that source, the MINING CONGRESS JOURNAL, I would naturally get a postal card from the Bureau some time later and I would be a month behind. People nowadays must not be a month behind, but must be up to the minute. So that I think really it is a great work and I think your sense of news, which is very well cultivated, is leading you into a real field of usefulness. So the remarks I made before I stand by. I stand by the further remark I made in regard to advertising.

Mr. Paul Wooton: If there are any further questions you desire to ask I would be very glad to answer them. Of course, I have not attempted to list all of the sources of information in Washington. I watch the Treasury decisions Mr. Morrison mentions and you will occasionally see that we have something from the Forest Service.

### IRON RECORDS SMASHED

The January first estimates of shipments of iron ore from the mines during 1916 are 75,500,000 gross tons, compared to 55,493,100 tons for 1915, according to Ernest F. Burchard of the United States Geological Survey, Department of the Interior. Not only are these record-breaking figures, but the ore sold for \$178,935,000, an increase of over \$77,000,000 compared with 1915. Ore in stock at the mines approximates 10,486,000 gross tons, compared with 13,748,000 tons in 1915.

Production of pig iron also made a record in 1910 with a total of over 39,000,000 gross tons, compared with 29,916,213 tons in 1915.

### FACTS AS TO OIL OCCURRENCE EXPLAINED NON-TECHNICALLY

The following non-technical explanation of facts as to oil occurrence is made by the Geological Survey:

"Oil occurs in porous rocks at various depths; generally the porous rocks are sandstone, but in a few places limestones have furnished oil. Porous beds, even when they are included in formations that may be oil-bearing, do not generally contain oil in large aggregations or pools except in places where they have been bent into more or less definite folds, when the oil if present is usually in the upward folds or anticlines and domes. There is no way of certainly determining that oil exists beneath the surface of the ground, in large quantities in any proven area, except by drilling. Films of oil on water, oil seeps or springs, gas emanations, asphaltic deposits, and rocks saturated with oil or emitting the odor of petroleum are favorable indications of the presence of oil or gas or both in rocks below or near by. They do not prove, however, that these substances exist in paying quantities or indicate the depth at which they occur. Thin films of oil on the surface of water in bogs or marshes may result from the decay of organic matter at the surface: also films of iron oxide, which accumulate in such places, may be mistaken for oil, and such occurrences should be carefully distinguished for actual oil seeps."

Preliminary estimates by John D. Northrop, of the United States Geological Survey, Department of the Interior, indicate that the quantity of crude petroleum produced and marketed in the oil fields of the United States in 1916 was 292,300,000 barrels. This quantity is greater by 4 per cent than the corresponding output in 1915, which reached the record-breaking total of 281,104,104 barrels. Mr. Northrop estimates that 38 per cent of the 1916 total came from the Oklahoma-Kansas field, 30 per cent from California, and the remaining 32 per cent from the Appalachian, Lima-Indiana, Illinois, north Texas, north Louisiana, Gulf coast, and Rocky Mountain fields.

### FRANKLIN FURNACE MINES NEARLY DOUBLE OUTPUT

The great demand for spelter of high quality during the war has resulted in a notable increase in the zinc output of the Franklin Furnace mines. The output almost doubled, from 74,253 tons of recoverable zinc in 1914 to 136,042 tons in 1915. New shafts were sunk at the Franklin and Sterling mines and a new mill was built at the Sterling mine.—(Extract from the Mining Congress Convention paper of C. E. Siebenthal.)

Copies of the Supreme Court opinion in the Minerals Separation case may be secured from the American Mining Congress, Munsey Building, Washington, D. C. Price 10 cents per copy.



**NEVADA PRODUCTION EXCEEDS****\$52,000,000 DURING 1916**

The value of the gold, silver, copper, lead, and zinc from the mines of Nevada in 1916, was approximately \$52,475,000, according to the preliminary figures of Victor C. Heikes, of the United States Geological Survey, Department of the Interior. This total represents an increase of nearly \$18,000,000, or about 52 per cent, above the corresponding figure of 1915, which was \$34,551,436. There were large increases, and record productions, made in copper, lead, and zinc, but there was a slight decrease in silver and a large decrease in gold.

The mine output of gold was valued at approximately \$9,000,000 in 1916, a decrease of 22 per cent from the output of 1915, which was \$11,404,300. The gold output from copper ore was increased, but that from amalgamation and cyanide mills was less in many of the camps. The Pittsburgh-Silverpeak mill, in Esmeralda County, was dismantled, and the Buckhorn, in Eureka County, was closed down. Both of these were important producers in past years. The Goldfield Consolidated, which is the most important gold producer of the State, was treating approximately 30,000 tons of ore per month. The output, however, was considerably less than in former years. A large flotation plant was being added at this property. The Jumbo Extension doubled its ore output, shipping from 2,000 to 3,000 tons per month. Shipments were also made from the Atlanta, and flotation concentrates by the Nevada Metal Extraction Co. One of the most important additions to the gold and silver production was from the operations of a cyanide mill at the Elko Prince property at Midas. Operations at Seven Troughs, National, and Round Mountain were somewhat less than in the preceding year. From Searchlight, in Clark County, ore and precipitates were shipped, and at Rawhide, in Mineral County, the Nevada New Mines acquired the Black Eagle property and operated two mills. At Aurora there was also increase in gold output.

The mine production of silver was about 13,680,000 ounces, which represents a decrease from 14,459,840 ounces in 1915. The value of this output, however, on account of the higher price of silver, increased from \$7,331,139 to about \$9,000,000 or 23 per cent. The silver output comes chiefly from the Tonopah district, where there was a marked decrease. In 1915 the district produced 516,337 tons of ore, \$2,228,983 in gold, and 10,171,374 ounces of silver. In 1916 the district produced approximately 448,000 tons of ore, \$1,941,000 in gold, and 8,884,000 ounces of silver. The largest producers were the Tonopah Belmont, Tonopah Extension, Tonopah Mining, Jim Butler, West End, Montana Tonopah, Halifax Tonopah, and Tonopah Midway. The Rescue Eula and Cash Boy were new producers. At the Tonopah Extension property ten stamps were added to the mill equipment. In the Rochester district, of Humboldt County, there was an increase in both gold and silver production from mill operations at the Nevada Packard and the Rochester

Mines Co., each treating 100 tons a day. It is planned to double the capacity of the plant of the Rochester Mines Co. In the Comstock district, of Storey County, there was an increase of approximately 60 per cent in the value of the gold and silver output. The production in 1915 was valued at \$378,731. The Union Consolidated mine was the most important producer, shipping ore to the Mexican mill. Other producers were the Ophir, Sierra Nevada, Andes, Chollar-Potosi, Comstock Phoenix, and Jacket-Crown Point-Belcher mines. The Yellow Jacket mill was run principally on dump ore, particularly after the Belcher mine was closed on account of fire on the 1400-foot level. In the north end of the territory, water is being lowered from the 2700 to the 2900-foot level, which will open up considerable new ground. In Churchill County, the mills of the Nevada Hills and Nevada Wonder were both operated throughout the year, and no great change was made in production of gold or silver. Some silver was contributed by the Monitor Belmont flotation plant at Belmont, in Nye County.

The mine production of copper increased from 68,636,370 pounds in 1915 to over 103,000,000 pounds in 1916, an increase of nearly 35,000,000 pounds. The value of the copper increased from \$12,011,365 to about \$28,120,000, or 134 per cent. The greatest increase was due to the operations of the Nevada Consolidated Copper Co., at McGill, in White Pine County. During the first three quarters of the year, the plant treated nearly 3,000,000 tons of low-grade copper ore and produced 67,836,688 pounds of copper. Ore was also treated from the Giroux property. In Lyon County, near Yerington, there was great increase in the shipment of copper ore, especially from the Nevada Douglas property. The latter half of the year the 250-ton leaching plant was operated. Although the Mason Valley smelter was idle, a 10-ton leaching plant was operated, treating ore from the Montana-Nevada mine. At the end of the year it was planned to operate again the Mason Valley smelter. A large increase in copper ore shipments came from the Santa Fe and Silver Star districts, in Mineral County, from mines in the vicinity of Luning and Mina, which were shipping at the rate of 1,600 tons per month. Shipments were also made from Battle Mountain district, in Lander County.

The mine production of lead increased from 16,637,277 pounds in 1915, to 23,466,000 pounds in 1916. The value of the output increased more than \$800,000 or 104 per cent over that of 1915, which was \$781,952. A considerable part of this production came, as in former years, from the mines of the Yellow Pine district, in Clark County. The Prince Consolidated, at Pioche, greatly increased ore shipments, and a considerable output came from the Uvada property. Other important lead shipments were made from the Groom mine, in Lincoln County, Nevada Bunker Hill property, in Elko County, and the Union Mines, in Eureka County. At Eureka, considerable ore was shipped from the Richmond-Eureka and California Mining Co. property.



The mine production of zinc was approximately 34,739,000 pounds, an increase of over 10,000,000 pounds from that of 1915. There was a greater increase in the value, from \$3,022,680 to \$4,759,000 or 57 per cent. Over 90 per cent of the output came from the Yellow Pine district, in Clark County, very largely from the Yellowpine and Potosi mines. Other important shipments of zinc ore or concentrates came from the Amalgamated Pioche property, in Lincoln County, and the Polar Star property, operated by the Nevada Zinc Mining Co., in Spruce Mountain district, Elko County.

Incomplete records of dividends paid by Nevada mining companies during the year amounted to \$11,348,000. The greater part of this was paid by the Nevada Consolidated. Other contributors were the Tonopah Belmont, Tonopah Extension, Tonopah Mining Co., Yellow Pine, Prince Consolidated, Jumbo Extension, Nevada Wonder, Jim Butler, West End, Seven Troughs Coalition, and Goodsprings Anchor.

#### **IDAHO MINES INCREASE OUTPUT BY 41 PER CENT**

The value of the mine output of gold, silver, copper, lead, and zinc in Idaho in 1916, according to the preliminary estimate of C. N. Gerry, of the United States Geological Survey, Department of the Interior, was over \$47,000,000, an increase of 41 per cent from \$33,328,930 in 1915. There was a record output of silver, lead, and zinc and increased production of copper, but a slight decrease in gold.

The mine production of gold decreased from \$1,179,731 in 1915 to \$1,098,000 in 1916, a decrease of 7 per cent. Part of the decrease was due to the smaller placer output from dredging. The gold output from copper ore, lead ore, and lead-zinc ore, however, was increased. The most important dredge operations were those of the Boston-Idaho, Boise County, and the Kirtlet Creek and Bohannon Bar, Lemhi County. Work progressed at deep, gold mines at Atlanta, Elmore County, and in Custer County. Mills were active at the Nellie mine at Horseshoe Bend and the Lucky Boy mine, Boise County.

The mine output of silver increased from 11,769,128 ounces in 1915 to approximately 12,500,000 ounces in 1916. As the price of silver was much above that of 1915, the value of the output increased from \$5,966,948 to \$8,225,000, or 38 per cent. There probably would have been a greater increase in the silver production from lead and lead-zinc ores had it not been for the peculiar smelting conditions during the year, as the Northport smelter, which received the Hercules ore, was being completed, and the Bunker Hill & Sullivan Co. at Kellogg was beginning smelter construction. Each of the following mines produced more than a million ounces of silver: Hercules, Bunker Hill, Morning, Greenhill-Cleveland, Caledonia, and Hecla.

The mine production of copper increased from 6,978,713 pounds in 1915 to over 8,000,000 pounds in 1916. This represents an increase from \$1,221,275 to \$2,184,000 or 79 per cent in value, due to the better price. A large part of the copper output came from the Empire Copper and adjoining properties near Mackay, in Custer County, from which greater shipments were made. In Shoshone County production came from the Caledonia, the Horst Powell mine, National, Richmond, and various properties producing principally lead ore. The Lost Packer Co., in Custer County, constructed a flotation plant, but did not operate the smelter.

The mine output of lead increased from 345,999,466 pounds in 1915 to approximately 362,000,000 pounds in 1916. The value of the lead output increased from \$16,261,975 to \$24,616,000, or about 51 per cent. There were important increases at the Morning, Hercules, Hecla, and Interstate-Callahan mines. The Hecla opened a new and important ore body, and the Morning is said to be developing into a larger mine at depth. The Bunker Hill output was normal, but the output of the lead mines of the Yreka district was generally less than 1915, especially as the Stewart ceased shipments early in the year. The lead smelting plant at Northport, Wash., was operated especially on Hercules ore and concentrates, from March to the end of the year. At Kellogg, foundations for the new 900-ton lead plant were being laid, and Idaho will soon have a smelting plant in the Coeur d'Alene region. In Lemhi County, lead shipments came from the Pittsburgh Idaho, Latest Out, and Gilmore; in Fremont County, from the Wilbert, and in Bonner County, from the Idaho Continental, where a new mill was completed. Mills were constructed at the Silverado, Alhambra, Hypotheek, constitution, and Ray Jefferson, and the Rex mill was improved. The Coeur d'Alene region made shipments of concentrate and crude ore at the rate of 45,000 tons per month, of which about 35,000 tons were lead material and the remainder zinc ore and concentrate.

The mine production of zinc increased from 70,152,234 pounds in 1915 to approximately 80,000,000 pounds in 1916. The value of the output increased from \$8,699,001 to about \$10,960,000, or 26 per cent. The Consolidated Interstate-Callahan was, as formerly, the most important producer, and shipped 68,000 tons of zinc ore and concentrate aside from lead product, and the Success contributed nearly the same amount of spelter. Other important producers were the Morning, Greenhill-Cleveland, and Frisco mines. Smaller shipments were made from the Terrible Edith, Paragon, Murray Hill, Highland Surprise, Constitution, Hercules, Colonial, Douglas, and Black Hawk, in Shoshone County, and the Minnie Moore, Nay Aug, Boston-Idaho, and North Star Triumph, in Blaine County, where a new mill was completed. The Ray Jefferson Co., joining the Interstate Callahan, completed the mill and made concentrates which were stored, awaiting the completion of the Beaver Creek branch of the O. W. R. & N. Railroad.



## HOLMES MEMORIAL VOLUME EXCITES FAVORABLE COMMENT

No public library is complete without having a copy of the memorial volume issued by the American Mining Congress as a tribute to the late Dr. Joseph A. Holmes, the first director of the Bureau of Mines. The work should be in the private library of every individual interested in mining. Extracts from a few of the letters, commending the volume, give an idea of its value:

WASHINGTON, D. C.,  
December 27, 1916.

"I am delighted, as all his friends must be, with the volume published to the memory of Prof. Holmes by the American Mining Congress. It constitutes a most worthy fulfillment of a most worthy purpose. All who are concerned in it have good reason to be proud of it."

(Signed) GIFFORD PINCHOT.

TERRE HAUTE, IND.,  
December 26, 1916.

"I wish to acknowledge receipt of the very handsome copy of our mutual friend, Dr. Holmes, Memorial Volume and after looking through it, I think it is a most suitable volume and the sentiments therein expressed I can certainly endorse and I feel that it is a great pity that Dr. Holmes could not live longer to finish the work that he so well begun and I appreciate being one of the number to be honored with a copy of this work."

(Signed) J. C. KOLSEM.

GILLESPIE, ILL.,  
December 25, 1916.

"Just a line to inform you that I have received by express a copy of the Holmes Memorial Volume and it certainly is fine. I wish to congratulate you and those responsible for this volume, and I think its contents very appropriate to the memory of Dr. Holmes. I believe this method of showing our appreciation of Dr. Holmes' life work will prove better than a monument of stone, granite or metal. I assure you that I would not part with my volume for any price."

(Signed) JOHN P. REESE.

SEATTLE, WASH.,  
December 20, 1916.

"The handsomely bound volume containing the tributes paid to the late Dr. Joseph A. Holmes reached me yesterday.

"It is very inspiring to know that a man's services are appreciated by his fellowman, as indicated by the collection of tributes contained within this volume.

"Dr. Holmes had very little regard for publicity, only in so far as it helped his great work in the uplifting of the miner.

"This volume, to me, is the very best Christmas present that could possibly reach me, and I will spend several enjoyable hours reading the kind expressions of the men who knew Dr. Holmes as you and I knew him."

(Signed) GEO. WATKIN EVANS.

NEW YORK,  
December 22, 1916.

"I beg that you will accept my congratulations on the excellent example of typography and binding of the volume issued by the American Mining Congress as a Memorial to the late Dr. Holmes. It is fitting that the beauty of Dr. Holmes life should have been perpetuated by the testimony of his friends and co-laborers in science and that the Congress in which he took such a deep and sympathetic interest during his busy career should have taken unto itself the duty of recording for posterity the deep love and affection in which he was held by his contemporaries."

(Signed) WALTER DOUGLAS.

SCRANTON, PA.,  
December 22, 1916.

"I was pleased the other day to receive a copy by express of a very handsome volume, Memorial of the late Dr. Jos. A. Holmes. It appeals to me as perhaps the most appropriate, satisfactory and enduring tribute which members of the Mining Congress could give as a testimonial of their esteem, and appreciation of the character and worth of a great man, and a most efficient and faithful public servant."

(Signed) WM. GRIFFITH.

NEW YORK,  
December 22, 1916.

"I have received the Holmes Memorial Volume and was delighted with it. No one could wish a more complete and satisfactory appreciation than is contained in this book. The beauty of it is that it is not the expression of opinion of any one man or any one organization. The subject is approached from many sides and the life and services of the late Prof. Holmes are viewed from many different angles. Together they sum up the man and his work in a way that is unique and valuable. I consider myself fortunate to have been permitted to join in this symposium."

(Signed) A. R. LEDOUX.

NEW YORK, N. Y.,  
December 22, 1916.

"I have just received the Holmes Memorial Volume which you sent me and I want to sincerely congratulate you upon it. It is a splendid piece of work and would, I am sure, meet with the admiration of Dr. Holmes himself, as it certainly does with mine."

(Signed) BRADLEY STOUGHTON.

CHICAGO, ILL.,  
December 21, 1916.

"I have just received my copy of the Holmes Memorial Volume, and am greatly pleased with the contents and binding. It is indeed a valuable addition to my library, and I hope it will furnish inspiration to the coming generation of mining men."

(Signed) CARL SCHOLZ.

PITTSBURGH, PA.,  
December 23, 1916.

"I received the copy of the Holmes Memorial Volume, which was produced under the auspices

of the American Mining Congress, in good condition.

"I wish to take this occasion to say that I prize this volume very highly, not only because it memorializes our dear friend, Dr. J. A. Holmes, but also because of the splendid expressions of esteem therein collected and preserved, given by those who knew Dr. Holmes intimately.

"The book itself is a work of art from every viewpoint, and one which those who have it will appreciate more highly as the days go by and the work of Dr. Holmes comes to complete fruition."

(Signed) S. A. TAYLOR.

CHICAGO, ILL.,  
December 22, 1916.

"I have just received my copy of the Holmes Memorial volume and I want to express my appreciation of it. It is a great deal of pleasure to read tributes of our mutual friend, Dr. Joseph A. Holmes, and it certainly shows the great esteem which his personal friends held for him. My one regret is that more of these things could not have been said to Dr. Holmes during his lifetime."

(Signed) J. K. DERING.

CLEVELAND, OHIO,  
December 22, 1916.

"The writer has received the copy of Holmes Memorial Volume and appreciates the same very much indeed. The writer has met Dr. Holmes quite a number of times, and learned of the great value of the work he has done for the mining cause. We are sure that you could have done nothing better than to issue this splendid volume, and are sure this action will meet with the wishes of Dr. Holmes. He has indeed done much good for humanity."

(Signed) C. O. BARTLETT.

## **OREGON DOUBLES ITS OUTPUT OF SILVER**

Preliminary estimates of the production of metals from Oregon mines in 1916, by the United States Geological Survey, Department of the Interior, show increases over 1915 for gold, silver, and copper, and a decrease for lead. The output of gold in 1915 was \$1,861,796 and the estimated output for 1916 is \$1,900,000, an increase of \$38,000. The output of silver in 1915 was 117,947 ounces, and the estimated output in 1916 is 227,500 ounces, or 109,500 ounces more. The output of copper in 1915 was 451,172 pounds, and the estimated output in 1916 is 2,527,000 pounds, an increase for 1916 of 2,076,000 pounds, and the output of lead in 1915 was 62,957 pounds, as compared with 22,000 pounds in 1916, or 41,000 pounds less. These preliminary figures are compiled by Charles G. Yale, of the San Francisco office of the Geological Survey.

The increase in gold is merely nominal, but that of silver has about doubled. The most notable increase is in the quantity of copper, an increase caused by the incentive offered by high prices.

There are less than 100 productive metal

mines in Oregon, and the number of placers is about double that of the deep mines. However, two-thirds of the gold output and virtually all that of the other metals, is derived from deep mines. No very productive new properties have been opened during the year. The entire output of the deep mines is derived from less than 160,000 tons of ore, having an average value of about \$9 a ton. Baker is still the most productive county in the State, yielding annually nearly 90 per cent of all the gold. The Cornucopia and the Baker mines, in the Cornucopia district, Baker County, are the most productive deep mines in Oregon. Other large, deep mines in Baker County are those of the Commercial Mining Co. (Rainbow mine), at Rye Valley, in the Mormon Basin district; the Columbia Gold Mines Co. at Sumpter, Cracker Creek district; and of the Homestead-Iron Dyke property, at Copperfield, Iron Dyke district.

## **CURRENT YEAR PROMISES THE BEST SAFETY RECORD**

"I am pleased to be able to tell you that while 1915 was the safest year ever known in coal mining in the United States, the figures for the first eight months of 1916 indicate that the 1915 record will be eclipsed. For these eight months of this year there are seventy-two less fatalities than for the same months of 1915, or a reduction of 5 per cent from the splendid record of that year." (Extract from address of Van H. Manning at the Mining Congress Convention.)

## **UNIFORM LAWS ONLY MATTER OF SIMPLIFICATION**

"To the engineer, uniform mining laws means simplification which is one of the most desirable features in any engineering work. The physical conditions of the coal mining fields of the United States are not so radically different but that competent body of men can draft a set of laws, or by synthetic analysis of those now on our statute books, set up a code to fit, and all mining engineers would be made happy thereby." (Extract from address of J. A. Garcia at the Mining Congress Convention.)

## **FUTURE DEMANDS SHOULD CONTROL CONSERVATION**

"In the conservation of our resources, the State geologist possibly above all others, should look into the future and be controlled by its prospective demands. Our rapidly increasing population; the near occupancy of all our farming and pastoral lands; the possible, even probable, depletion of the soils, natural fuels and useful minerals—all these should have his most serious attention. In those States where forestry legally comes within the duties of the State geologist, an additional responsibility of the greatest importance and one that often requires much diplomacy is placed upon him." (Extract from address of A. H. Purdue at the Mining Congress Convention.)



## LEAD OUTPUT IS INCREASED TEN PER CENT OVER 1915

The lead industry in 1916 made good gains in output, both in mining and smelting. The lead content of ore mined in the United States in 1916 was about 622,000 short tons, compared with 561,639 tons in 1915, an increase of 60,000 tons, or over 10 per cent. The average price of lead in 1916 was so much higher than in 1915 that the increase in value of the mine output of lead was about 50 per cent.

The Northport Smelting & Refining Co. in March blew in the remodeled smelter at Northport, Wash., and later in the year added two more lead furnaces, making four in all. The operation of the smelter gave an impetus to the production of lead in Washington, the output of which was four times as large as ever before. The Bunker Hill and Sullivan smelter was started at Kellog, Idaho, and is expected to be in operation in the spring of 1917.

The State that recorded the largest gain in lead production was Missouri, which made an increase of over 25,000 tons. Good gains were also made by California, Idaho, Nevada, Utah, and New Mexico.

The following estimates have been compiled by C. E. Siebenthal without change from reports made to the United States Geological Survey, Department of the Interior, by all the lead refineries and soft-lead smelters in operation during the year. These reports give records of the actual production for the first 10 or 11 months and estimates of the output for the remainder of the year. The statistics of imports, exports, and lead remaining in warehouse have been made up from the records of the Bureau of Foreign and Domestic Commerce for 10 or 11 months and estimates for the remainder of the year.

### RECORD BREAKING PRODUCTION

The production of refined lead, desilverized and soft, from domestic and foreign ores in 1916 was 579,600 tons, worth at the average New York price \$78,826,000, compared with 550,055 tons, worth \$51,705,000, in 1915, and with 542,122 tons, worth \$42,286,000, in 1914. The figures for 1916 do not include an estimated output of 21,800 tons of antimonial lead, worth approximately \$4,283,000, compared with 23,224 tons in 1915 and with 16,667 tons in 1914. Of the total production, desilverized lead of domestic origin, exclusive of desilverized soft lead, is estimated at 324,000 tons, against 301,564 tons in 1915 and 311,069 tons in 1914; and desilverized lead of foreign origin at 21,400 tons, compared with 43,029 tons in 1915 and 29,328 tons in 1914. The production of soft lead, mainly from Mississippi Valley ores, is estimated at 234,200 tons, compared with 205,462 tons in 1915 and 201,725 tons in 1914. The total production of desilverized and soft lead from

domestic ores was thus about 558,200 tons, valued at \$75,915,000, compared with 507,026 tons, valued at \$47,660,000 in 1915, a gain of 51,000 tons. Of this gain in domestic production, about 29,000 tons was made in soft lead and 22,000 tons in domestic desilverized lead.

In consequence of the great demand for lead a considerable quantity of secondary lead (about 7,000 tons) and secondary antimonial lead (over 5,000 tons) was recovered at the regular smelters.

The final figures for the production of soft lead will show an increase of a few thousand tons over those here given, for the reason that the smelters and refiners of argentiferous lead undoubtedly treated more or less soft lead from the Mississippi Valley which in their preliminary estimates is not distinguished from silver-lead ores.

## APATHY OF PLACER MINERS MAY UPSET PLANS OF SURVEY

Out of 3,200 requests which were sent out by the Geological Survey asking for certain necessary data concerning placer mines, replies have been received from only 22 per cent. It required two requests to bring in that many replies. To the original request only 19 per cent of those receiving it replied. A second request was sent to 1,306 operators.

This is taken to indicate that the placer industry is not concerned deeply in knowing the details of this class of mining operations. The lack of interest that has been shown may result in the abandoning of the original plan of the Survey to secure new data regarding placer mines along the lines of the exhaustive statistics which are so eagerly demanded by other classes of mining operations.

It is very evident that complete data regarding the placer industry can be obtained only by personal investigations by Survey men. This will entail considerable expense and much loss of time, and while it has not been decided, it is not probable that other work will be delayed to furnish information to a class of operators who are evidently uninterested in it.

## FEW MINERS KILLED IN ACCIDENTS IN 1915

"Great progress has been made in coal mining. The statistics for the year 1915 show these rather important conclusions.

"The actual number of men killed was the lowest in the last eight years.

"The death rate for each 1,000 men employed was the lowest in the last sixteen years.

"The number of tons of coal produced for each miner killed was the largest in the entire history of coal mining in the United States." (Extract from address of Van H. Manning at the Mining Congress Convention.)





A CARTOONIST'S CONCEPTION OF  
GEO. OTIS SMITH  
at the Mining Congress convention

### Zinc in Wisconsin

Under the stimulus of great demand and high prices for zinc developments in Wisconsin are being directed toward larger size of plants and greater output, better equipment, and higher recovery.—(Extract from the Mining Congress. Convention paper of C. E. Siebenthal.)

### NORTHWEST CONVENTION TO BE HELD IN SPOKANE, FEB. 19 TO 25

The 1917 Northwest Mining Convention will be held in Spokane, February 19 to 25.

This is the most important mining event in the Northwest and is attended by mining men from the Northwestern States, British Columbia and Alaska.

Exhibits of ores, minerals, machinery, devices and supplies are made and there are four days of sessions devoted to the mining industry.

The engineering societies hold technical programs; there are stereopticon lectures for evenings and the entertainment of visitors by a special committee.

### WETTING ALONE NOT CERTAIN PREVENTIVE OF EXPLOSION

During the past two months, tests have been made at the experimental mine of the Bureau of Mines, at Bruceton, Pa., on mixtures of

Pittsburgh coal, shale, and water to determine what proportions of shale and water are necessary to make the coal dust inert. The tests were made under the standard conditions for explosion tests. The explosions are started by a 50-foot ignition zone of (dry) pulverized Pittsburgh coal dust which is ignited by a blown-out shot of 4 pounds of black powder. The mixture to be tested is loaded along both entries for distances of 300 and 350 feet from the ignition zone.

The coal was tested in three sizes: (1) Pulverized, of which nearly all would pass through 100-mesh and 75 to 85 per cent through 200-mesh; (2) 20-mesh coal, of which 40 per cent would pass through 200-mesh; and (3) 20-mesh coal, 20 per cent of which would pass through 200-mesh. The percentage of water in the mixture was kept constant at either 10 or 20 per cent and the proportion of shale increased until the mixture would not propagate flame. The coal, shale, and water were thoroughly mixed before being placed in the mine.

Tests were also made with mixtures of coal dust and water, without shale dust. In one test pulverized coal mixed with more than 23 per cent water was used. This mixture was wet enough to ball in the hand. At the time this test was made all the surfaces of the mine were very wet, the roof and the ribs dripping with moisture. A strong propagation of flame was obtained, the pressure developed being over 50 pounds per square inch at some points.

The 20-mesh coal of which 40 per cent passed through 200-mesh would not propagate flame when mixed with 20 per cent water, but the coarser grade 20-mesh, of which 20 per cent passed through 200-mesh, would propagate flame when mixed with 15 per cent water.

These tests indicate that only the most thorough and constant wetting of a mine would be effective unless there is a large proportion of shale dust present. In winter the dust dries out so rapidly that where the dust is nearly pure coal wetting alone would probably not be a sure means of preventing a dust explosion.

### GREATEST COAL PRODUCTION

Coal production records were smashed in 1916, when the output was around 597,500,000 tons, compared with 570,000,000 tons, the previous high record established in 1913. The quantity of bituminous coal mined was 509,000,000 tons, an increase compared with 1915 of 66,500,000 tons, or 15 per cent, according to estimates by C. E. Leshner, of the United States Geological Survey, Department of the Interior. The quantity of Pennsylvania anthracite was about 88,312,000 net tons, a decrease of 600,000 tons.



### WASHINGTON DOUBLES ITS OUTPUT OF THE RED METAL

The value of the mine output of gold, silver, copper, lead, and zinc in Washington increased from \$744,033 in 1915 to approximately \$2,018,000 in 1916, according to the preliminary estimates of C. N. Gerry, of the United States Geological Survey. This is the record output of the State in value. On account of the increase in the prices of the various metals the value of the output was nearly three times that in 1915. The quantities of the metal produced also notably increased.

The mine production of gold increased from \$391,419 in 1915 to about \$540,000 in 1916. The greater part of the gold was derived from the siliceous ore shipped to smelters from the Republic district of Ferry County. The cyanide mills were not operated.

The silver output of Washington mines increased from 255,837 ounces in 1915 to about 315,000 ounces in 1916. Owing to the advance in average prices of silver, the value of the output increased from \$129,709 to over \$207,000. The greater part of the silver came from copper ore and concentrates shipped from the Chewelah district, in Stevens County; a smaller amount was derived from siliceous ores mined in the Republic district.

#### COPPER MORE THAN DOUBLES

The mine output of copper increased from 1,020,926 pounds in 1915 to about 2,569,000 pounds in 1916, thereby more than doubling the former output. Since the average price of copper was more than 27 cents a pound in 1916, the value of the copper increased from \$178,662 to over \$701,000. Thus copper is now of more importance than gold, which was formerly the principal metal of the State. A large part of the copper output came from the Chewelah district, especially from the United Copper mine. Approximately 10,000 tons of copper ore and concentrate were shipped from the district, and several new properties were added to the shipping list, including the Copper King, Blue Star, June-Echo, and Amazon. The Napoleon mine, near Marcus, was a large shipper of low-grade copper ore, and the Laurier mine, in Ferry County, contributed considerable ore. In the Loon Lake district, about 40 miles north of Spokane, in Stevens County, shipments of copper ore were made from March to the end of the year.

#### ENORMOUS INCREASE IN LEAD

The mine production of lead increased from 295,215 pounds in 1915 to about 4,937,000 pounds in 1916. The value of the output increased from \$13,875 to about \$336,000. This notable increase was due largely to the discovery of lead at the Electric Point mine, near Northport. The Bonanza mine at Bossburg also contributed lead ore.

#### BIG INCREASE IN ZINC

The mine output of zinc increased from 244,906 pounds in 1915 to about 1,709,000

pounds in 1916, an increase of nearly 600 per cent. The value increased from \$30,368 to over \$234,000. In Pend Oreille County, the Lead Zinc Co., at Metaline, increased its output of zinc ore and concentrate, and it is now planned to increase further the capacity of the mill, which treated 100 tons a day. The Norman Mines Co., near Northport, also shipped considerable zinc carbonate. The mine, however, was closed at the end of October.

A marked impetus was given to mining in the Republic district, from which about 40,000 tons of siliceous ore were shipped to several smelters to be used as converter lining. The Surprise-Lone Pine-Pearl property was the largest shipper, the San Poil and Knob Hill following. Smaller shipments were made from the Hope, Rathfon Reduction Company, Tom Thumb, Ben Hur, and Mountain Lion. The Knob Hill was put in shape for production. The Surprise-Lone Pine-Pearl property was acquired by the Northport Smelting Co., and considerable ore was shipped to that plant in the last half of the year.

A modern lead smelting plant was operated at Northport from March to the end of the year. Though built primarily to reduce Idaho material it treated also custom ore from Washington.

### PRESIDIO COUNTY FURNISHES MOST OF TEXAS SILVER

The output of Texas mines for eleven months of 1916 with the estimated output for December, as shown by preliminary figures reported by Charles W. Henderson, of the United States Geological Survey, Department of the Interior, amounted to \$600 in gold, 680,000 ounces of silver, 50,000 pounds of lead, and 100,000 pounds of copper, as compared with \$1,503 in gold, 675,473 ounces of silver, 219,298 pounds of lead, and 42,941 pounds of copper in 1915. The greater part of the output of silver came from the Presidio silver mine and cyanidation mill, in the Shafter district, Presidio County. Some silver and copper were produced in the Allamoores-Van Horn district, Culberson County, and some silver, lead and copper in the Sierra Blanca district, El Paso County.

### BUREAU OF MINES TO PUBLISH GLOSSARY OF MINING TERMS

A glossary which will include all terms peculiar to mining is to be published by the Bureau of Mines as soon as the extensive compilation can be completed. This will probably require a year or more. This will be made the most complete work of this kind ever published. In addition to mining terms in English, an extensive list of the more generally used Spanish mining expressions will be included. The glossary will indicate where the terms are used, in case their use is provincial, and will cover all of the mining districts in the United Kingdom and in the United States.

## Personals

C. W. Griswold, of the Associated Geological Engineers, has transferred his activities from Wyoming to Oklahoma. M. L. Fuller, managing engineer of the engineering division of the same organization, visited the New York office recently.

J. M. Wright, of the Raleigh Coal & Coke Company, of Cincinnati, was in Washington attending a meeting of the Winding Gulf Operators' Association, last month.

Prof. F. W. Clarke, chief chemist of the Geological Survey attended the meeting of the American Chemical Society in New York last week.

Dr. Chas. Parsons, chief of the Division of Mining Technology, of the Bureau of Mines, has returned from Europe, where he made a study of processes for extracting nitrogen from the atmosphere.

R. W. Pack of the Geological Survey has returned from extended work in the California oil fields.

F. C. Schraeder has returned to Washington after several months in Nevada and Idaho in the interest of the Geological Survey.

F. B. Van Horn of the Wrightsman Oil Company was in Washington recently.

The Hazard Coal Operators' Association will hold its annual meeting, at the Phoenix Hotel, Lexington, Ky., on January 9.

Irving T. Snyder, recently elected a director of the American Mining Congress, is spending some little time in California. He will return to Denver during the early part of this month.

Falcon Joslin, who has been spending some months in Alaska, is again in the East, and was a caller at the Mining Congress Office recently.

Lewis Titus, of California, is spending some time in Washington in interest of the oil claimants of California.

H. S. James, secretary of the Western Petroleum Refiners' Association, of Kansas City, Mo., was a caller at the Mining Congress headquarters last month.

J. F. Callbreath, secretary of the American Mining Congress, has returned to the Washington office after an extended trip in Colorado

and the Middle West. Mr. Callbreath will leave the early part of the month to attend the meeting of the Colorado Metal Mining Association at Denver, and the Northwest Mining Association at Spokane.

Col. B. F. Millard, after attending the recent convention of the Mining Congress at Chicago, visited New York and Washington, spending several days at each point. While in Washington, he was a caller at the Mining Congress office.

Capt. Baird Halberstadt, geologist and consulting engineer, of Pottsville, Pa., when recently in Washington, called upon the secretary of the American Mining Congress.

Dr. Henry S. Drinker was in Washington last month attending a conference of the governing council of the National Conservation Congress, which was held with a view to making arrangement for its next meeting, which will probably be held in New Orleans. It is anticipated that this meeting will devote itself to a discussion of the waterways and drainage problems of the Mississippi valley.

### **COST OF PRODUCTION AND MARKET CONDITIONS CONTROL**

"There are two compelling factors in determining your selling price: First, the cost of production; second, market conditions. What possibility has a coal operator, in the absence of cooperation, to possess accurate knowledge with respect to market conditions? None whatever. 'Market conditions,' generally speaking, consist of the prices at which all competitive coals are being sold. False reports as to the prices which are quoted by competing houses are widely current; and too often they receive credence, and efforts are made to meet prices which never existed; thus reducing the whole level of prices." (Extract from address of Ralph Crews, at the Mining Congress Convention.)

### **SAYS CHAOS REIGNS AS A RESULT OF THE WITHDRAWAL ORDERS**

"Ever since the withdrawal order the conditions in the oil fields of California have been chaotic. Companies do not know what their rights are; suits by the Government have been commenced against some and receivers have been appointed.

"No new work is being done, great losses are being suffered, and bankruptcy faces many who but a few years before in the best of faith went upon government land under the mining laws of the country and risked their fortunes in an effort to discover oil in a locality that was most forbidding and discouraging. What is going to be done for these men? What relief should Congress give them in the Oil Leasing Bill now pending in the Senate of the United States? These are pressing questions. If this bill passes,



and there is every prospect that it will, the petroleum and gas lands owned by the Government will thereafter be leased to those offering the best bid therefor." (Extract from the address of Roy A. Bishop at the Mining Congress Convention.)

### GEOLOGISTS DIFFER ON THEORIES OF ORIGIN OF OIL AND GAS

"Practically all geologists hold to the organic theory of the origin of oil and gas, but there are several eminent men among them who believe in the inorganic theory. The advocate of either theory is able to disprove the theory of the other to his own satisfaction, but is unable to conclusively prove his own. Consequently, in the absence of positive proof, when asked what is the origin of oil and gas, we must answer, we do not know. The interior of nature's laboratory is not open to inspection, and it is extremely doubtful if this question can be solved. We think, however, that the theory of its origin held by a geologist must to some extent influence his attitude of mind in attempting to locate deposit." (Extract from the address of J. C. McDowell at the Mining Congress Convention.)

#### Coke Report Out

The Geological Survey's report on coke for 1915 is now ready for distribution.

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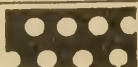
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# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## A NATIONAL PROBLEM

What is the problem which economists and statesmen are so frequently calling to the attention of the public as the greatest of questions to be faced immediately after the war?

The question of how to sell the products of American industry at prices which will justify the rate of wage which will be essential to provide an American living for American workmen. The question presents two problems, each of which requires solution in order to meet the situation.

1. The control of the home market for from 90 to 95 per cent of the production of American industry.

2. The control of a foreign market for from 5 to 10 per cent of our industrial productions.

After giving all due prominence to the influence of banks and money—after discussing all problems of transportation and exchange—after exhausting the subject of conservation of natural resources—after settling, as best a majority may do, the great moral questions—after stripping the verbiage from political discussion—we are left with the exceedingly simple question, "How are we to keep the American workman employed at remunerative wages?"

The satisfactory solution of this question insures good business conditions and the failure to solve it means business depression and want.

One school of economists will urge that the solution is a high protective tariff, high enough to preserve our own markets for the product of our own labor. This solution is very simple as to 90 per cent

of our production. But what of the other 10 per cent which our own people cannot consume? Can we prosper when 10 per cent of our manufacturing plants are idle—when 10 per cent of our workmen are seeking employment? If it is true that we can produce 10 per cent more goods than we can consume, we must find an outlet for that surplus or else 10 per cent of our productive forces must be in idleness. Conditions might be imagined in which the earnings of this 90 per cent would be divided among the whole productive forces of the country. This would require a revolution in present-day political conditions and is practically impossible. Ten per cent of idleness means disastrous competition followed by panic and a wholesale destruction of values. This might furnish a solution. By many this is thought to be the inevitable solution; breaking down of prices of labors' product to a point so low as to command all markets. To accomplish this through efficiency would be statesmanlike; to accomplish this result by breaking down the American wage scale would be disastrous to the country and a political blunder so stupendous as to be a crime. What, then, is the remedy? The writer believes that the only permanent remedy lies in efficiency. Germany, with a territory the size of Texas, and nothing like as rich in natural resources, through the economy, industry, and efficiency of her people, came very near to being the industrial master of the world.

The United States has many thousand times more natural wealth than Germany, and with like thrift can absolutely



dominate the world's commerce. This will not and cannot be accomplished through a reduction of the efficiency of the American workman—either as compared with his own past output or with the output of his world market competitors in other lands.

The advocates of a seven-hour day—the organization which, through inefficiency, through lessening the productive services of the individual, undertakes to find work for all should, at the same time, qualify for service in the camp of starvation. Through efficiency only can we hope to sell our surplus products in foreign markets, and this is essential to the continuous and lucrative employment of all our workmen.

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### THE DOMINANT POLITICAL FACTOR

It would, perhaps, be a rash statement to say that the Committee on Interstate Commerce of the United States Senate is controlled and dominated by the American Federation of Labor, which in turn is controlled by Mr. Samuel Gompers, and that in consequence the demand of Mr. Gompers for something which seems to be wrong is more potent than the demand of the President of the United States for a thing which seems to be right. President Wilson has asked that Congress shall enact a bill through which "The concerted action of powerful bodies of men shall not be permitted to stop the industrial processes of the nation." In the January number of the MINING CONGRESS JOURNAL, attention was called to the fact that the first part of the President's program was approved by the labor leaders and that the second part does not meet their approval and we stated that, "It remains to be seen whether organized labor is the dominant political factor in the Government or whether Congress is ready to demonstrate the opposite by putting into effect President Wilson's suggestion." It was not then anticipated that so ready a confession would be presented as the action of the Senate Committee on Interstate Commerce in its decision not

further to consider this matter seems to be. Had the matter been held under consideration, the action would not be so conclusive, but, when so important a committee shall definitely decide to pigeon-hole so important a matter, it would seem to justify our opening statement.

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### ECONOMY IN PAPER SHOULD NOT GO TOO FAR

While the efforts being made by Congress to effect economies in the use of paper are commendable and doubtless will have the effect of eliminating some Government publications which are of doubtful value, a too zealous prosecution of the curtailment of publications would result in serious losses to the public. The value of the paper in most Government publications is so infinitesimal, as compared with the value of the information to the public, that any step which would prevent the extent of circulation of the documents would be penny wise and pound foolish.

We are interested most directly, of course, in the publications of the Bureau of Mines and of the Geological Survey. We are very positive that the value of the publications of these two bureaus has been so well demonstrated as to preclude any thought of suspending any portion of these publications. In our opinion it would be very unwise to discontinue the free distribution of the publications which are not of such a technical nature as to be of interest only to engineers and other specialists.

It is Congress, rather than the departments, which has the reputation of being wasteful in matters of printing. We do not agree that the Congress is wasteful. It is true that some waste results from a liberal printing policy, but the losses are so small when compared with the benefits which result from a generous issue of documents affecting the public good that it hardly is worthy of consideration, especially when that consideration is taking up the time of Congress whose maintenance costs thousands of dollars an hour.

## COTTRELL AN ASSET TO THE MINING INDUSTRY

That the Bureau of Mines is particularly fortunate in having at the head of its division of metallurgy so capable and so adaptable a man as Dr. F. G. Cottrell has been recognized for some time by those familiar with the personnel of the Bureau. Without question, Dr. Cottrell could command a higher salary in private employment. The fact that he is held in his present place as chief metallurgist of the Bureau of Mines by his intense interest in advancing metallurgy in a national way should bring Dr. Cottrell deserved commendation. His presence in the Government service is a decided asset to the metal mining industry.

## GOVERNMENT CONFISCATION

The patriotic pride of every citizen is affected whenever he is convinced that the Government to which he owes allegiance is violating the plain intent of its agreements. The adherent to the policy "My country right or wrong," as applied to foreign governments, is not ready to justify his country in violating its implied contracts with its own citizens. The greatness of this country has been built upon the fulfilment of the nation's contracts with its pioneers who settled upon and developed that great territory not comprised in the boundaries of the thirteen original States. When the offer of the nation is accepted by a citizen and in compliance with the prescribed regulation he invests large sums of money in the development of an enterprise fraught with benefit to the community, other citizens, who know the facts, can hardly be expected to approve an effort to deprive the investor of the property which his capital and energy have created.

When the United States Government purchased the Alaskan Northern Railway for \$1,150,000, one-half of the value placed upon it by its own appraisers, it might be said that the Government had driven a shrewd bargain—but when it is known that the price accepted was some millions of dollars less than had

been invested in its construction and that the price was accepted under threat that the Government would parallel and thus make worthless the whole investment, the transaction takes on the atmosphere of brigandage.

Alaska will be greatly benefited by the construction of the Government Alaskan Railway, but nothing like as much as if the road had been built by private capital under the necessity of making it pay by the development of business enterprises along its route. This the Government cannot well do without giving an undue advantage to the fostered enterprises in competition with those not so assisted, as it is plain that the Government cannot well make itself a part of all business.

It is equally evident that the Government ought not to take steps in the business world calculated to injure or destroy the legitimate investment of its citizens. When the Tanana Valley Railroad was constructed it was a great benefaction to that community and has continued to be so down to the present time. It has not been a profitable investment except to the people who have been kept from freezing by fuel which could not have been supplied by any other agency. Now it is understood that the Government is proposing to parallel 31 per cent of the line of this railway at its middle section and thus practically destroy the whole investment. It is a ludicrous anomaly that Falcon Joslin, president of the Tanana Valley Railway, drew the bill providing for the Government Alaskan Railway and did more than any other one man in bringing about its enactment.

To those who believe that the government construction of railroads is a crime, Mr. Joslin's dilemma will be regarded as an example of retributive justice.

Those who appreciate the spirit of public service which inspired Mr. Joslin's work and the actual service rendered will not approve the proposal to destroy his property without making just compensation.

Surely an administration which through any means destroys the value of the legitimate investments of its citizens can



but suffer in self respect whether that investment be made in an Alaskan railway, a California oil well, or a Colorado water-power development.

## GOVERNMENT PRINTING

### POLICY NEEDS REVISION

If it were possible to reduce to dollars and cents the losses due to delays in printing Government publications, a protest would result which would insure a change in the present system. What is a 24-hour job for a private printing establishment often requires a month at the Government printing office. The delay is so great that duplicating machines are coming into increased use in all departments.

The mining industry suffers more keenly from this cause perhaps than does any other, since the information conveyed by the Government's work often prevents extensive duplication of effort or may have an important bearing on mining operations.

Many who are familiar with the printing situation in Washington believe it could be bettered materially if private printing establishments were allowed to bid on printing in competition with the Government printing office.

## A MENACE TO GOVERNMENT

At a recent hearing at the House Committee on Interstate Commerce which is considering the Adamson Bill for the investigation of industrial disputes, Mr. Samuel Gompers told the committee that if Congress should pass any law to make a strike unlawful that he, for one, could be counted upon as one who would violate it.

At the Baltimore convention of the American Federation of Labor a resolution was adopted to the effect that if certain laws should be adopted by the country which did not meet the approval of organized labor, its members would be upheld in open violation of those laws.

The United States of America is a country guaranteeing individual freedom under the constitution and in accordance with law. It is a government by the majority and minorities are expected to live up to the law. When the minority

is right, it can soon induce enough of the majority to join with it to change the objectionable law. Under this form of government there seems to be no excuse for an attempt by minorities to disobey the law. If minorities are to be permitted this privilege, then our Government must fail. The temerity which prompts any individual, and particularly a leader of men, to publicly threaten a violation of any law is not only astounding, but dangerous to the liberties of the people.

## A COURAGEOUS EXAMPLE

An interesting occurrence is reported from the State of Colorado where a law similar to the proposal of Mr. Adamson has been in effect for nearly two years and where a strong effort is being made by organized labor to bring about the repeal of this law by the Colorado Legislature. Shortly after the last gubernatorial election, it is reported, a delegation called upon the then governor, George A. Carlson, and said to him, in effect, "Governor Carlson, one of the important parts of the platform upon which you made your appeal for reelection was the industrial investigation act known as the Colorado Industrial Commission Law. Upon that issue you were repudiated by a majority of 30,000. What do you think of that law now?" Governor Carlson replied that he was ready to stand upon and fall with that principle of legislation. The substance of the reply was, "We do not approve the law, we do not believe it is constitutional, we propose to test it by breaking it and this by calling a strike in the northern coal fields." Governor Carlson, it is reported, called his stenographer and dictated a telegram to Mr. John P. White, the president of the United Mine Workers at Indianapolis, Ind., in words substantially as follows: "Your personal representative, Mr. Grant Hamilton, and the leader of your organization in this State, Mr. Doyle, are now in my office. They advise me that they propose to test the validity of the Colorado Industrial Commission law by ordering a strike in the northern coal fields in violation of the requirements of that law that no strike shall be declared prior to or during investigation. Do you



approve the action of your representatives?" And turning to the gentlemen present, Governor Carlson said, "If Mr. White does approve this and your order the strike as you propose, I shall have him indicted for conspiracy, and if you call this strike as you propose, I shall have you arrested immediately for conspiracy, and you gentlemen will find that there are other laws in Colorado more drastic than the Colorado Commission law and you will have to answer to those laws." It is needless to say that the strike was not called.

### **BY-PRODUCT COKING CAPACITY OF U. S. INCREASING RAPIDLY**

By the end of 1917 the United States will have a by-product coke oven capacity which compares favorably with that of Germany prior to the war. The growth of this industry in the United States has been remarkable. In 1890 there was no coke produced in the United States in by-product ovens. In 1893, the production was 12,850 tons. This jumped to 1,000,000 tons in 1900 and to 11,000,000 tons in 1912. From 1912 to the beginning of 1915 there was no particular increase, but in 1915 and in 1916 the industry increased with rapid strides to a total of nearly 20,000,000 tons.

Important centers of the by-product coke industry have been established at Indiana Harbor, Duluth, St. Louis, Cleveland, Johnstown, South Bethlehem, Youngstown and Toledo. At many other places the industry is assuming important proportions. At the end of 1917 the United States will have capacity for turning out in excess of 400,000 tons of ammonium sulphate from by-product coke. When it is considered that the German capacity in 1913 was barely 500,000 tons a better idea is secured of the importance this industry has assumed in the United States. Of course, the German capacity has been greatly increased since the opening of the war.

### **"HOLE IN THE DOUGHNUT" ATTRACTS MUCH ATTENTION**

Considerable attention has been attracted in Washington to a clever publication by the Franklin County Coal Operators' Association, entitled, "The Hole in the Doughnut." The publication consists of a single sheet on which appears a realistic likeness of a homemade doughnut. The larger part of the doughnut is marked off to show the proportion of the selling price of coal which goes to labor. The remaining smaller portion of the doughnut is divided in the exact proportions represented by supplies and material, sales expense, taxes and insurance, general expense and association assessments.

Then comes even a more clever part of the figure. The hole in the doughnut is divided into sections showing profit, plant depreciation, land depletion, contingent fund and interest on invest-

ment. The only comment which appears on the sheet is the following, "Some operators do not make money through failure to include all necessary items in determining proper sale price."

### **STANDARDIZATION OF MINE STATISTICS BEING SOUGHT**

Many problems have been presented to the committee on the standardization of mining statistics, which is working in cooperation with the Bureau of Mines. Some objection has been made to the inclusion of metal mining statistics in the report of this committee. It is declared that the metal mining interests were not presented at the meeting of mining inspectors at which the discussion took place with regard to uniform statistics.

Objection has been made to the refinement of statistics to such a point as to tax the patience of the operators who are called upon for the information. The elimination of all but essential questions is urged.

Standardization of questions is more to be desired, C. E. Leshner, the statistician of the Geological Survey, says, rather than an effort to secure all information for the different bureaus of the Government service through one inquiry. If the questions are standardized, he argues, mine operators will be able to keep their records so as to furnish the information readily. Whether they are called upon to fill in the same information on two or three separate inquiry cards is a matter of slight inconvenience. He favors the continuance of separate inquiries by the different bureaus.

### **BANKS REFLECT PROSPERITY OF ANTHRACITE REGION**

Statistics compiled by the Anthracite Bureau of Information at Wilkes-Barre, from reports received through the courtesy of fifty-six banks distributed among the nine principal cities of the anthracite region, show an increase in deposits in one year—from November, 1915, to November, 1916—of 14 per cent, or from \$108,705,812 to \$124,022,303.

In considering these statistics it should be remembered that although by far the greater part of the bank deposits in the anthracite region flows originally from the payrolls of the anthracite mining companies which distribute annually some \$150,000,000 in wages, the bank deposits are not unduly swelled by the accounts of the larger mining companies whose chief balances are kept in New York and Philadelphia. The regional bank deposits are for the most part maintained by the local industries, tradesmen, and the wage earners, no insignificant proportion being represented by savings deposits of mine workers.

There are only two establishments in the anthracite region that manufacture munitions of war and the region does not directly benefit to any great extent from the war in Europe. The figures here shown may consequently be taken as indicative of a healthful condition of trade and employment throughout the entire community.



# REVENUE BILL SMACKS STRONGLY OF CLASS LEGISLATION, MANY CONTEND

Despite Fact that Mining Industry Will Pay Large Portion of New Tax if Bill Becomes Law it is Less Objectionable than Tax on Certain Mineral Products, it is Believed

While there is a general feeling among Senators and Representatives from the mining states that the revenue bill which will be introduced shortly, smacks strongly of class legislation and that the mining industry will be called upon to pay a large portion of the revenue which will be raised, there is no evidence thus far (January 23), that the bill will be opposed by the Democratic members from mining states.

The proposal to raise revenue from profits exceeding 8 per cent will fall heavily on the mining industry, all admit, but in view of the fact that it applies to profits in other lines of endeavor and in no way singles out the mining industry, the disposition, apparently, of the mining industry is to allow the proposed bill to take its course. While the present bill is not at all pleasing to most of the representatives of the mining states they regard it as a great deal better than a measure singling out certain mineral products for taxation. There was a general feeling of relief when it became apparent that it would not be necessary to fight again to keep the committee from singling out copper and a few other metals for taxation.

Great interest is surrounding the consideration of the administration's railroad legislation. The Senate Committee on Interstate Commerce voted seven to three to exclude the provision prohibiting strikes pending investigation. Hearings still are in progress before the House Committee on Interstate and Foreign Commerce, but indications point that this committee, as well, will vote against the provision restricting the right to strike.

The oil land leasing bill probably will have to fight for a place on the Senate calendar. It is not scheduled to be included in the majority party's program, but it is possible that it has sufficient ardent supporters to force it before the Senate.

Since all bills die on March 4, which is the end of the session, and as there is no chance of considering any but the more important measures in the few weeks remaining, no new bills of interest to miners have been introduced.

Senator Phelan presented in the Senate a statement of members of the California delegation in Congress in regard to the leasing bill and the naval oil reserves. The statement is signed by Senators Works and Phelan and

Representatives Church, Kahn, Curry, Kettner, Raker, Hayes and Elston.

The principal points of the statement are summarized as follows:

"1. Up to March 1, 1916, there had been withdrawn from entry in the western States 5,603,295 acres of oil lands.

"2. When President Taft, in 1909, issued an order withdrawing over 1,000,000 acres of land in California 95 per cent of the California claimants had already entered upon it under the mining laws and initiated their claims. In December, 1912, after millions of dollars had been expended and valuable properties created, naval reserve No. 2, covering a portion of the land withdrawn, was established.

## SAYS WHOLE NATION SUFFERS

"3. The whole country suffers from the diminishing of the oil production on the Pacific coast, which has resulted from the government suits to cancel these claims and from the insistence of the Navy in denying relief to the claimants. The diminished production in California has resulted in an increase in the price of gasoline and all petroleum products. For this reason the question involved in the pending bill with its relief provisions for the California oil producers is not a local one, but one which affects the entire country.

"4. The assumption of the Navy that it needs the oil in reserve No. 2 is unfounded. This reserve cannot be used to store oil for future use of the Navy because there are already more than 200 wells drilled within its limits. The Bureau of Mines estimates that these wells have already drained this reserve of one-third of its entire content.

## ABUNDANCE OF OIL AVAILABLE

"5. There is an abundance of oil available for the Navy which it can secure from publicly owned lands without taking the wells drilled and owned by private citizens, the oil from which is being used in the industries of the country. Naval Reserve No. 1 is estimated to contain 100,000,000 barrels. Naval reserve No. 3 has 30,000,000 barrels. Naval reserve No. 4, created in December, 1916, is estimated by the Geological Survey to contain 1,000,000,000 barrels. The Government also owns 3,200,000 acres of withdrawn petroleum lands, from which it can create other reserves containing many millions of barrels more."

### CURTAILMENT OF PUBLICATIONS IS SUGGESTED BY CONGRESS

In an effort to reduce the consumption of paper the Senate has called upon the departments to advise if it is possible to discontinue some publications and effect other economies in the use of paper. In turn, the secretaries of the departments have inquired of the heads of each bureau as to the possibilities of using less paper. In regard to the Geological Survey and the Bureau of Mines, it is regarded as certain that they cannot discontinue any of their publications without entailing a loss to the public greatly in excess of the cost of the paper on which its bulletins are printed.

The Geological Survey, in 1916, went too far in an effort to economize in the matter of printing. As a result of limited editions of publications, public demand was such that it was necessary to have reprints made of thirty-four publications. The Bureau of Mines has been contending since its organization with an inadequate printing fund. This fund has been so small as to limit very greatly the service that it has been able to perform in certain lines of investigation.

In connection with the Senate resolution, it has been suggested that the free distribution of Government publications be discontinued. Such a proposal meets with the determined disapproval of practically all persons in touch with the situation. If all publications on matters relating to the mining industry were to be placed on sale, it would be no bar to their circulation among the more highly organized companies and among engineers but the prospectors, small operators and the less organized companies in all probability would not receive these helpful publications. The principal idea of Government service is that it must be conducted in the interest of the whole public and not in the interest of a few.

Again, it is necessary for the Geological Survey and the Bureau of Mines to rely upon operators for a great deal of information regarding production and in the collection of other facts regarding mining operations. After being deeply indebted to the operators for necessary information, it would not be following out the spirit of cooperation if publications were not sent gratis to those who assisted in making them possible.

### STANDARD ACCOUNTING SYSTEM GREATLY NEEDED

"Any study of costs in the coal industry finds its point in the question not who but what fixes the price of coal. The cost of mining coal, like the cost of living, is increasing. Exact mining costs, however, cannot be determined until the operators have accomplished their reform of standardizing accounting." (Extract from the address of Geo. Otis Smith at the Mining Congress Convention.)



A CARTOONIST'S CONCEPTION OF  
HENRY MACE PAYNE

### MORE SILVER MINED BUT LESS REFINED IN 1916 THAN IN 1915

The decrease of silver production during 1916 is attributed largely to the fact that a considerable quantity of ore mined during the year was not treated. Judging from the quantity of ore mined, there should have been a considerable increase of silver production for the year. The compilation of the reports from the refiners, made to the Bureau of Mint, shows clearly that there was an actual decrease over the production of 1915. In some cases it develops that the smelters were not able to obtain as large supplies of ores and concentrates as they could have handled, owing to the car shortage. In some other cases treatment plants are considerably behind their receipts of ore.



## **FELLOWSHIPS IN METALLURGY DESIRED BY MANY SCHOOLS**

Establishment of fellowships in metallurgy by cooperative arrangements between the University of Washington and the Bureau of Mines is likely to develop in the near future. The success of the fellowships, which were established by the University of Utah in co-operation with the Bureau of Mines at Salt Lake City, has called wide attention to the advantages to be gained by this procedure. As a result the Bureau of Mines is in receipt of inquiries from several schools located at points where the Bureau of Mines maintains branches or experiment stations.

The Bureau of Mines is anxious to extend this facility as it gives an opportunity to train metallurgists along the line of its work. These metallurgists on entering private employ carry with them the high standards which characterize the Government's service. In a lesser degree good is resulting to the Bureau in making available young men from which the Bureau may draw competent specialists.

## **INVESTIGATIONS OF PRODUCER GAS PLANTS IS ADVISED**

While considerable indefiniteness exists regarding many of the operating details of producer gas plants, it is believed by specialists at the Bureau of Mines that this form of power production merits investigation.

R. H. Fernald is the author of a bulletin just published by the Bureau of Mines in which he calls attention to the strong opposition which the producer gas plant has met from steam-plant operators. It is his opinion that these operators see possibilities of being forced to renovate their entire plants, which would result, if it were necessary to replace the steam boiler with the producer unit. Mr. Fernald states that the producer gas plant occupies a strong position at small central stations and many isolated plants, but that large units of the producer type have not materialized, largely because of the opposition mentioned.

## **IMPORTANCE OF RATE ADJUSTMENT POINTED OUT**

"The same reasons that call for uniformity in mining legislation, with greater force cry for an equality in the relationship of the coal freight rate adjustments between the various competing fields.

"Into the web and woof of its competitive industrial garment three basic strands are interwoven; omit or weaken either of these and the garment is 'shoddyized.' These three are wage-scale, legislative regulations and freight rate adjustments, and the latter is not the least of these."—(Extract from the Mining Congress Convention paper of R. W. Ropiequet, at the Nineteenth Annual Convention of the American Mining Congress.)

## **HESS TELLS HOW TUNGSTEN VEINS ARE IDENTIFIED**

In response to an inquiry concerning the identification of tungsten veins, Frank L. Hess, of the U. S. Geological Survey, states:

"The outcrops of tungsten deposits can ordinarily be identified only by the occurrence of the mineral in the outcrop, except in localities where veins are known to carry tungsten minerals. If sulphides are present sulphuric acid is formed by the action of moisture and air upon them, though of course in very dilute solution. The sulphuric acid attacks the tungsten minerals and destroys them. Wolframite may leave hydrous iron oxide in the cavities occupied by the wolframite which may show traces of a cleavage similar to that of wolframite, and iron oxide with such a cleavage may be taken to indicate the former existence of tungsten minerals in the exposed part of the vein and their probable presence in the unexposed parts. Scheelite leaves cavities, some of which may contain a little golden yellow tungstite, the hydrous tungsten oxide. Tungstite may also be left after the decomposition of the wolframites."

## **To Write Report on Phosphate**

W. C. Phalen, who recently was transferred from the Geological Survey to the Bureau of Mines, has been re-transferred to the Survey for a period of three months that he may prepare a report on the Kentucky phosphate field. The field work for this report was done by Mr. Phalen under a cooperative agreement between the United States Geological Survey and the Kentucky Geological Survey. Mr. Phalen regards the possibilities of the Kentucky field as very promising.

## **Akron the "Rubber Capital"**

The position of Akron, Ohio, as the "Rubber Capital of the World" has been so well established in the public mind that it is doubtful whether any one would question seriously the claims of the rapidly growing Buckeye City to the distinction it has won. A recent valuation of Akron industries for property taxation, completed by the auditing department of the county in which the city is located, brings out with striking clearness the predominance of the rubber manufacturing industry over any other of the many that have brought about an increase of approximately 300 per cent in the population of Akron during the past ten years.

The taxable value of the great plant of the B. F. Goodrich Co. alone amounts to almost half of the total of \$43,896,440 placed upon the 168 industries located in Akron and Summit County. When it is remembered that included in these 168 industries are such concerns as the Diamond Match Co. and the Quaker Oats Co., it is possible to get an idea of the immensity of the Goodrich Co.'s establishment.



# DEPARTMENT OF LABOR PROPOSES ABSORPTION OF BUREAU OF MINES

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**Such Action Would Put an End to Cooperation With Mine Operators, According to  
the Opinion of Persons Well Advised—Scientific Work of Bureau  
Depends on Cooperation with Operators.**

After the failure of several legislative plans to transfer the Bureau of Mines from the Department of the Interior to the Department of Labor, a more pretentious effort to accomplish this purpose has been launched. The Secretary of Labor, in a letter to the Speaker of the House of Representatives, makes certain recommendations along this line. Along with the Bureau of Mines, the Secretary of Labor proposes that his department be given jurisdiction over all, or a part, of the work at present being done by the Public Health Service, the Office of Markets and Rural Organization, Steamboat Inspection Service, the Bureau of Navigation, the Interstate Commerce Commission and the Board of Mediation and Conciliation.

With the influence of a Cabinet officer behind such a proposal, it is expected that an active effort to this end will be made. Many friends of the Bureau of Mines are very much opposed to this action. They feel that operators of mines will not be willing to cooperate, at least to the same extent, in the work of the Bureau if it becomes a part of the Department of Labor. There is no hostility on the part of mine operators toward the Department of Labor, it is generally believed here, but operators and employers generally regard the Department as being primarily and above all in the interest of the employees. To bear this out is the declaration of Secretary Wilson himself. With regard to administering his Department he says: "I have regarded it as contemplating a development of diplomatic duty with reference to labor disputes analogous to those of the Department of State with reference to national controversies. As it is the duty of the Department of State to represent our nation with fairness toward all other nations, so it is the duty of the Department of Labor to represent wage-earning interests with fairness toward all other industrial interests."

Despite the fact that the suspicion is probably unjust, many employers are of the impression that the Department of Labor is not averse to furthering movements looking to special privileges for labor organizations. For this reason it is regarded as highly probable that they will refuse to open their records and entrust their business secrets to a bureau in the Department of Labor. As the success of most scientific and technical work conducted by the Government depends on an intimate degree of cooperation with employers, a very important feature of the work of the Bureau of Mines practically would

be nullified if the action should be taken which is recommended by the Secretary of Labor.

In the organic act establishing the Department of Labor, its duties are prescribed as being, "To foster, promote and develop the welfare of the wage earners of the United States." That it is very necessary to carry out such duties to a large portion of the population apparently is generally admitted, and employers are in accord with plans looking to the welfare of their employees. There are few of them, however, who wish to combine with such work the scientific investigations being done in the interest of the mining industry by the Government.

## **MINING ENGINEERS TO MEET IN NEW YORK FEBRUARY 19-22**

The American Institute of Mining Engineers will hold its one-hundred-and-fourteenth meeting in New York City, February 19, 20, 22. They are expecting an attendance of over 500, and some very important questions are to be discussed.

Among the leading papers which will be presented are: (1) "Recent Geologic Developments on the Mesabi Iron Range, Minnesota," by F. F. Wolff; (2) "Grain Growth Phenomena in Metals," by Henry M. Howe and Zay Jeffries; (3) "Evidence of the Oklahoma Oil Fields on the Anticlinal Theory," by Dorsey Hager; (4) "Magnetic Concentration of Low-Grade Magnetic Iron Ore," by S. N. Norton; (5) "The Conservation of Phosphate Rock in the United States," by W. C. Phalen; (6) "Potash as a By-Product from the Blast Furnace," by R. J. Wysor; (7) "Significance of Manganese in American Steel Metallurgy," by F. H. Willcox.

## **COAL AND COKE ESTIMATE EXCITES GENERAL INTEREST**

Decided interest has been shown at the Bureau of Mines in the recent press bulletin issued by the Geological Survey which estimates the production and reviews many features of the coal and coke industries in 1916. The Bureau of Mines is enlarging upon certain features of this report which are of especial interest in connection with work it is doing. From the figures given by C. E. Leshner, the statistician of the Geological Survey, the Bureau of Mines, among other things, has been able to calculate the amount of toluol produced during 1916 and to make other interesting deductions.



### **"COST OF COAL" PAPER COMES IN FOR EDITORIAL COMMENT**

In discussing the Mining Congress Convention paper of Geo Otis Smith and C. E. Leshner, director and statistician, respectively, of the Geological Survey, the Review of Reviews in its January issue says:

"The advanced cost of coal during the autumn and early winter has been brought home with force to householders as well as to many industrial interests. So serious has been this increase that as a result of universal complaints and protests there have been various official investigations and remedial steps proposed to deal with the high cost of fuel.

"Few of these investigations and discussions have been entirely free from prejudice or have taken into consideration the fundamental economic facts connected with the ownership of the mines, and the mining, transportation, and distribution of coal. Accordingly a paper on the subject presented to the American Mining Congress at Chicago on November 14, 1916, by Director George Otis Smith and C. E. Leshner of the United States Geological Survey, and reprinted in Science and other scientific journals, is particularly welcome, as it supplies the fundamental facts on which any present or future plans for government control or operation or ownership must be based. Such facts, it is unnecessary to say, seldom appear in popular or political discussions, even if they are known, which may be disputed.

"In the coal industry the first cost or mining cost represents the value given to a ton of coal by the mine operator and mine worker, including the expenditure for wages, supplies and power, the operator's selling costs and his overhead expenses, and the original or resource cost—the royalty or depletion charge—and the profit or loss on the sale. These elements vary greatly between districts, and even between mines of the same owners in the same district. According to the paper, 'It is not practicable to assign a very exact figure to the mining cost—the census of 1909 indicated an average of \$1 a ton for bituminous coal and \$1.86 for anthracite, but these figures are believed by some operators to be too low. It is possible, however, to show in a general way the distribution of this item: the cost of mining is divided between labor, 70 to 75 per cent; materials 16 to 20 per cent, general expense at mine and office and insurance, 2 to 4 per cent; taxes, less than 1 per cent to 3 per cent for bituminous coal, and 3 to 7 per cent for anthracite; selling expense, nothing to 5 per cent; and recently to these items has been added the direct and indirect cost of workman's compensation, which may reach 5 per cent for bituminous coal.'

"Now the cost of selling coal must be considered, for it may be little or nothing for some producers who sell to themselves or direct to the railways, or it may be as much as 15 cents a ton for prepared sizes of anthracite. But the important element is the transportation charge, which varies naturally with the length of haul.

"In the interstate traffic, both rail and water, bituminous coal probably pays an average freight of nearly \$2 per ton. In other words, the transportation costs more than the product and, as some parts of the country are just now learning, is more difficult to obtain. The value of coal, like the value of so many other commodities, is a place value. The average freight charge on anthracite is higher than that on bituminous coal; first, because the rates are higher, and, second, because, according to the reports of the Interstate Commerce Commission, all movement considered, the coal is carried a greater distance.

"Then comes the marketing cost. The commissions of brokers, shrinkage, and deterioration all figure, and finally there is the large cost of retailing.

"About half of the anthracite and around 15 per cent of the bituminous coal is retailed in less than carload lots, and the greatest number of individuals are directly concerned in the marketing of this portion, regarding the profits on which there is the widest divergence of opinion. The margin in the retail business between cost on cars and price delivered is between \$1.25 and \$2 a ton and is not more than enough to give on the average a fair profit. The shrinkage and, in part, the deterioration are together seldom less than 1 per cent of the weight and may exceed 4 per cent, and the retail dealer also must provide in his selling price for uncollectible accounts. Advertising is a large expense—in part carried by the retailer directly, but all borne by the industry. The largest single item in the cost of retailing is, of course, that representing the labor of handling and the local cartage, which together make up about half the marketing cost.

"With all these various costs discussed and analyzed, there remains to be considered a primary one, namely, the resource cost or the cost to the operator of the coal in the ground, usually expressed as a royalty or depletion charge.

"The present average rate of royalty on anthracite is probably between 32 and 35 cents a ton on all sizes, which is from 12 to 14 per cent of the selling value at the mine. The minimum rate (about 10 per cent) is found in some old leases, and the maximum (20 to 27 per cent) in leases made in the last five years. R. V. Norris states that in the late sixties, when the annual output of anthracite was around 15,000,000 tons, royalties were 8 to 10 cents a ton on prepared sizes, but that no charge was made on the smaller sizes. In the seventies the rate rose to 25 cents on prepared, one-half that on pea, and one-fourth on smaller sizes.

"Striking a balance between labor's share and capital's return, it would be found that 'the mine worker, the trainman, and wagon driver together receive fully half of the price of the anthracite delivered at your house, and the same three classes of labor receive not less than half the price paid by the average consumer for the cheaper soft coal. In a similar manner the average return on the capital invested in land, mining plant, railroads and coal yard may be roughly calculated with the result that landlord, bondholder and stockholder of coal company and railroad together receive about \$1.15 from the ton of anthracite and only 50 to 75 cents from the ton of bituminous coal, and of either of these amounts the mine operator's share is only a small fraction.'

"There seems to be little hope of reducing costs in mining methods or wages, but the most promising source of relief seems to lie in reducing transportation charges through a shortened length of haul.

"Though many a consumer's preference for coal from a distant field over that from a field nearer home is based on special requirements, the deciding element in the preference of other consumers is simply the price, and this, in



turn, may be largely due to a differential freight scale, which is thus not in the public interest, if we admit the premise that it is wasteful to burn coal in hauling coal into coal districts or past such districts, except in so far as quality requirements absolutely demand the long-haul coal. The recent eastward movement of the higher-grade coals, in part caused by the export demand, may involve some increase in the average length of haul, and thus in the transportation cost of coal not reported; but on the other hand, this enforced adjustment may lead some consumers to discover nearer-home sources of coal equally well suited to their purposes. Reduction in marketing costs is a reform so close to the consumer that he should be able to find for himself whatever relief is possible. Professor Mead, of the University of Pennsylvania, is authority for the statement that the delivery of coal is costing the dealers 50 cents a ton more than is necessary.

"The paper suggests that 'The burden that seems evitable under unregulated private ownership of a natural resource like coal is that because the lands containing these national reserves of heat and power are taxed and because the individual or corporation properly charges up interest at current rates on his large holding, the consumer must pay a resource cost which takes into account the long period of undevelopment.'

"The conclusion is drawn that 'as coal is more an interstate than intrastate commodity, any regulation of prices needs to be under Federal control, and to benefit both consumer and producer such control cannot stop with transportation and mining costs, but must stand ready to exercise full rights as a trustee of the people over the coal in the ground. . . . Public regulation, however, will be fair and indeed in the long run will prove beneficial to the landowner as well as to the consumer, to the mine worker as well as the operator, because any such agency as the Federal Trade Commission, in its control of prices, must determine costs; and as we interpret the present attitude of the whole coal-mining industry the operators are willing to rest their case on a fair determination of actual costs on which their profits may then be figured.'"

### TOPOGRAPHIC MAP NECESSARY IN SCIENTIFIC SEARCH FOR OIL

For an examination with the object of ascertaining whether the geological conditions are favorable for the occurrence of oil or gas in commercial quantities, so far as this question is determinable from purely geologic criteria, it is desirable, in the first place, to have an accurate topographic base map on a scale of an inch or more to the mile, on which the elevations or altitudes above sea level of a considerable number of points have been accurately registered according to Geo. Otis Smith, director of the Geological Survey.

Such topographic base maps not only facilitate the geologic investigation but they contribute to its economy and the precision of the results. Without such a map it is necessary for the geologist to do plane tabling, with determination of a great number of elevations, with consequent increase in the time and cost requisite to the work, Dr. Smith points out.

Discussing the matter further, Dr. Smith says:

"The work of the geologist consists in the examination and identification of the geologic formations exposed in the region, for the purpose of ascertaining whether they are of the age and general character of formations which are known to carry oil or gas in commercial amounts in the general region or in other parts of the country.

"Conditions being found favorable in this respect, the next step in the investigation is to make a detailed examination of the structure or altitude of the beds in the search for folds, embracing, in particular, anticlines and domes, these being upward folds, of sufficient distinctness and area and so located with regard to the broad structure of the region or basin as to favor the segregation of disseminated oil and gas into pools, which usually are found within these upward folds. In many regions this structure, which is so important in making locations for tests, cannot be determined by the geologist from mere surface criteria, for reasons that the bed rocks of the area may be completely or very largely masked by losses or glacial drift or alluvial deposits, or because the outcrops of bedrock, if they are sufficiently numerous, lack recognizable key rocks for the identification of definite horizons and the determination of their stratigraphic relations in sufficient number and exposures to permit the recognition of the configuration of the various strata. Sometimes the altitude of the beds cannot be detected until the records of numerous wildcat-drill holes are available for study, together with the criteria afforded by the expanse of bed-rock.

"It is further important that the geologist ascertain, if possible, whether the formations within reach of the drill in the region under examination probably contain suitable storage reservoirs for oil and gas—namely, porous sandstone or limestone interbedded with other strata including impervious beds which will prevent the leakage and waste of the hydrocarbons. These reservoirs must be deep enough below the surface so that the oil and gas will not have escaped, and not so deep that they cannot be reached by the drill. It is desirable that the geologist should also be careful to ascertain whether these sands are equivalent to or comparable to the sands containing oil or gas in productive regions, and whether they are associated in the formations with rocks whose composition is propitious for the generation of oil and gas.

"All these questions should, whenever possible, be determined in advance of selecting a location for boring, for while it is true that the drill is, after all, the only reliable test as to whether oil or gas may be present in commercial amounts in a region, these valuable mineral deposits, if they are present at all, are in most cases to be found only in the anticlines, domes, or other favorable structures; and since these structures occupy only a small proportion of any extended area the chances for loss or sheer waste of the investment are multiplied if the locations are not chosen, so far as possible, with reference to favorable structures."



### **WEST SHOULD MAKE INFLUENCE FELT AT CAPITAL, DECLARES STUDENT OF CONSERVATION**

Geo. H. Patrick contributes the following presentation of views concerning the conservation question:

"The coal and oil lands east of the Mississippi are, and always have been, held in private ownership, for the profit, primarily, of the owner; but next, and to a far greater extent, benefiting the States in which located, through the use of the mined product in manufactures and other industries, and the tax revenues derived therefrom, directly and indirectly, without which the governments of those States could not be supported.

"In the whole west the title to the coal and oil lands, with a few exceptions passed to patent, remained in the Government, supporting no industry, producing no revenue to State or county, a hindrance rather than a help to the development of the States made out of these same lands, and because of them.

"No reason exists why these western lands should contribute to support the eastern States, any more than that the eastern coal and oil lands should pay all their net revenues into the Federal treasury to lessen the expenses of western State governments, although one is as fair as the other; but the East is not satisfied with enforcing this tribute, it insists that no western mineral lands shall be privately owned or operated, and that none of the natural resources of the West shall be used at all by or for the people of the States in which located; although the East is exhausting and selling at its own price, all its own mineral deposits of every character. The East is getting away with it, too, and, singularly enough, masquerading as a conservator of the resources of the nation. The casual onlooker is unable to discover why a ton of coal, or a barrel of oil, taken from eastern lands does not, to that extent, exhaust the national resources as much as if taken from western lands; but no one says anything about that.

"It seems to me that this is the West's fault, and that it is time to sit up and take notice. The West had no trouble, this fall, to elect the President of its choice, and generally, its legislators, not always of the same party, by a little very simple team-work. Playing without signals, it made a touch-down at whichever goal it aimed. Why does not the West play the game all the time, as well as one day in every four years? Why does it not say to its representatives, 'remember that whoso provideth not for his own household is worse than an infidel,' and demand the team work that will stop this costly discrimination with a jolt.'"

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Dr. Henry S. Drinker, of Lehigh University, Bethlehem, Pa., was a recent visitor in Washington.

### **MINING IS BEING REDUCED TO MANUFACTURING BASIS**

"It is a far cry from the small and uncertain mining efforts of fifty years ago to the splendidly equipped and solidly financed organizations that now handle thousands of tons of ore per day," says Bulletin 107, just issued by the Bureau of Mines. "The old mining was largely speculative," continues the bulletin, "the new is practically on a manufacturing basis. In the old days of mining the aim was, chiefly, to find comparatively rich ore; modern practice looks more toward efficiency in mining and milling, so that vast tonnages of low-grade material may be worked at a profit. The old operators had faith and hoped for good returns; the new ascertain with a fair degree of precision what the available tonnage is, what the cost of mining and treating the ore will be, the time necessary to exhaust the deposit, the capital required, and the net profits to be made. The old mining was financed on a highly speculative basis, and the value of mining stock was largely controlled by the imaginations of the promoters and of the individual holders. In the new regime the financing of mines is often as conservative as the financing of manufactures or railroads, and the value of stock, quoted on the leading exchanges, is controlled by the carefully estimated profits in sight. Of course, with every legitimate industrial enterprise go certain business risks, and mining is not exempt from these. Then, too, valueless mining as well as valueless industrial stocks are sometimes offered for sale by the intentionally dishonest, or the ignorant. However, the prospective purchaser of a mine nowadays, if he is willing to pay for the services of reputable mining engineers, can obtain information on which to base an opinion as to the quality of his investment."

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### **WILL PRODUCE 350,000 TONS OF COMBINED NITROGEN DURING 1917**

Only by the most skillful use of the best methods in the United States can it be hoped to produce nitrates in competition with Chilean saltpeter. This is the opinion of specialists here who are studying the problem. It is understood that Germany will produce this year 350,000 tons of combined nitrogen, which is equivalent to more than 1,600,000 tons of ammonium sulphate or 2,000,000 tons of Chile saltpeter. This tremendous increase in production has so reduced the cost in Germany as to make it possible to produce it at less cost than Chilean saltpeter can be laid down in Germany. The difference in freight rates between Chile and Germany as compared to those from Chile to the consuming centers in the United States is not great. The cost of labor, however, makes it impossible for the United States to produce nitrates synthetically as cheap as they can be made in Germany unless under almost ideal conditions.

### GOVERNMENT EXPERTS WELL KNOWN TO MINING MEN



CHARLES W. HENDERSON

In charge of the Denver office of the United States Geological Survey

### ANTHRACITE BUREAU GETTING OUT INTERESTING BULLETINS

Very interesting and instructive bulletins are being issued frequently by the Anthracite Bureau of Information, at Wilkes-Barre, Pa. This bureau is under the capable direction of Dr. Edward W. Parker, formerly statistician of the Geological Survey. In a recent bulletin he points out the interest that is being displayed in the mining institutes for mine workers, which are growing up in the anthracite field. In connection with these institutes, evening schools have been established. A portion of this bulletin is as follows:

"All classes of occupation in and about the mines are represented in the membership of these institutes. The higher officials of the various companies are the patrons of the organizations, and the directors are selected from the heads of the operating departments. During the fall and winter, monthly meetings are held at which men trained in practical mining, or having technical knowledge of some phase of the in-

dustry, contribute papers or give talks of an educational character.

"The best index of the interest displayed in these gatherings is the average attendance of 462 at the sessions in one town last year. Four institutes alone had a total membership for the season of more than 3,200.

"But the most important function of the institutes has been developed through the members acting as 'the big brothers' to the less fortunate of their co-workers, who have been encouraged to join the evening schools. The members of one institute had the distinction of watching the evening classes with paternal eyes until last year they saw 1,800 students enrolled. In the preceding three years, sixty-eight pupils of these classes had successfully passed the State examination for mine foreman. Of these, twenty-five are in line for promotion and the other forty-three are already at better-paying positions, earning an aggregate of 40 per cent more wages. And one graduate of these schools has been able to qualify as an inspector of mines—one of the most cherished posts of honor and emolument to which the mine-worker aspires."

### SOLUBLE POTASH SALTS SAVED AT CEMENT PLANT

A study of the electrical precipitation of dust containing soluble potash salts, which is in operation at the plant of the Security Lime & Cement Co., at Hagerstown, Md., was made recently by Dr. F. G. Cottrell, E. F. Burchard, and W. C. Phalen. Dr. Cottrell is the chief metallurgist of the Bureau of Mines, Mr. Burchard is in charge of the division of the Geological Survey, and Mr. Phalen is connected with the division of mining technology of the Bureau of Mines.

In commenting on the visit, Mr. Phalen declared that the work being done by the Security Co. is a most excellent illustration of the conservation of a most valuable product which is going to waste in most plants. The conservation of flue dust at cement plants and blast furnaces is one of the most promising means for securing a supply in this country of potash salts sufficient for our domestic requirements, Mr. Phalen believes.

### RATE ADJUSTMENTS HINDERED BY INTERNAL DIVISIONS

"If the coal industry is ever to have a freight rate adjustment based upon any fair and reasonable degree of uniformity and relativity, it must have a broader vision, less of petty division, and more coordination and union of efforts, less of passion, and more of reason, less dependence upon fortuitous chance and more upon the principles of true business."—(Extract from the Mining Congress Convention paper of R. W. Ropiequet at the Mining Congress Convention at Chicago.)



## **ALASKA LOSES BY PINCHOT BLUNDER, SAYS EDITORIAL**

"The Alaskan Empire, published at Juneau, and some other papers in the northern territory, voice some concern over the fact that few applicants for leases covering coal lands have been received, and the Post-Intelligencer, of Seattle, in one of its usual dignified editorials refers to the subject at some length. The Seattle paper shows that with a production of copper approximately \$40,000,000 this year, there is a demand for Alaska smelters, and goes on to show the Government has made a mistake as to the proper procedure to adopt for the encouragement of coal leases, it should remedy the difficulty without delay," says the Seattle Railway and Marine News.

"This brings up an interesting point, interesting as the fact that the Gifford Pinchot Forest Reserves, containing 'seventy-two billion feet of marketable lumber,' are not being fully utilized for the furnishing of lumber for the great railroad system the Government is building through the Chugach Forest Reserve, but quite to the contrary, lumber to the value of over \$1,000,000 has been shipped from the United States to Alaska during the year just ended, and this total does not include doors, sash, blinds, furniture and all other manufactures of lumber.

"Returning to the question of the coal situation in Alaska, the largest users of fuel are steamships, mines, railroads and river boats, and all of these companies now and for some time past have been using California oil for fuel. At such time as a coal mining operator can arrange to deliver a ton of coal at tidewater ports at the rate to equal rate for a ton of coal, in barrels of oil, then some change might be expected to take place in the situation.

"It all reverts to the question of Alaska's resources withdrawn from development, brought about by Pinchot, and the present situation must exist until such time as the United States Government admits the error of the past in full and makes it possible for the only parties interested in utilizing those natural resources, to acquire same on a safe, sane and sound business policy.

"There is nothing the matter with Alaska. Its future is assured, but it must always be remembered that those who were ruthlessly and unfairly prohibited from enjoying to the slightest degree certain natural resources of that country are now able to produce other resources and to prosecute their work in the most successful manner through the aid of California oil, and today California oil holds the key to the industrial situation in the splendid territory of the north.

"California oil is going to help make a total of commerce for 1917 even exceeding that of 1916. There is no getting away from the cold fact that no citizen, group of citizens or corporation would

attempt to open any Alaska coal field on a big scale, when 90 per cent of the users of fuel are going to stand by California oil.

"It is worthy of careful thought. Far be it for us to utter the old cry 'I told you so,' but every tank ship loaded with oil moving to Alaska and every shipload of lumber, and many of them will move in the years to come, will be proof positive of the truth of every statement made in the anti-conservation press to the effect that Pinchot and his followers made the most lamentable blunder and the country suffers in consequence."

## **NEW OIL SHALE RESERVES DISCUSSED BY SECRETARY**

"The most important single act during December in connection with the classification of mineral lands was the creation of two naval oil shale reserves, one of 45,440 acres in western Colorado, and one of 86,584 acres in northeastern Utah," says a statement from the office of the Secretary of the Interior. Continuing, it says: "The lands thus set apart for the use of the Navy contain bodies of shale which, when mined and distilled in properly constructed retorts, yield oil of good quality. Thus far oil has not been extracted from shale in the United States in commercial quantities, since the discovery of crude oil developed by wells, because oil can be secured in the latter way much more cheaply than through the more complex process of extracting it from shales. But the oil shale industry has existed in Scotland for half a century in spite of the competition of the oil fields of the world, and the time will doubtless come when the large oil shale deposits of western United States will also be developed in a commercial way.

"These naval oil shale reserves have been created to provide for the needs of the Navy during that future time when the ordinary oil fields have been so reduced that it becomes practicable and profitable to distill the more expensive shale oils. No other important reservations were created during the month and no extensive restorations were effected."

## **HIGH PRICES MAKE POSSIBLE INCREASED RECOVERY OF COAL**

"It must be remembered that conservation of a natural resource though it undoubtedly will be of direct economic benefit in the future, is not essentially a cheapening process; in fact, these increased recoveries of coal have in large part become possible only because of a higher market price." (Extract from the address of Geo. Otis Smith at the Mining Congress Convention.)

### **Issuing Interesting Bulletins**

Favorable comment is being made at the Geological Survey with regard to the bulletins being issued by the California State Mining Bureau. F. McN. Hamilton is the mineralogist in charge.

# BUREAU OF MINES TO DIRECT DRAFTING OF NEW REVISION OF LAWS BILL

At Request of Chairman of Committee on Mines and Mining, Van. H. Manning Calls  
Upon Prominent Men in Industry to Assist in Preparing Measure

A bill providing for a thorough revision of the mining laws will be drafted under the direction of Van H. Manning, Director of the Bureau of Mines, before the convening of Congress in December. The bill now before the House Committee on Mines and Mining brought forth such a volume of protests that Dr. Martin B. Foster, the chairman of the committee, decided to hold it in abeyance until other proposals could be made available. For more than a year Dr. Foster has been urging Mr. Manning to prepare a bill covering the whole question of mining law revision. Mr. Manning was not anxious to undertake a work of this magnitude which is certain to bring forth much criticism and was only persuaded to undertake it when it became very evident that a commission for the study of the question was not likely to receive congressional approval, and that suggestions from other sources were not of such a nature as to make it possible to formulate a bill which was insured of anything like general approval.

Mr. Manning has called upon W. R. Ingalls, L. D. Ricketts, James Douglas, J. R. Finlay, J. Parke Channing, Hennen Jennings, and John Hays Hammond to assist in the drafting of a bill providing for a revision of the mining laws. Messrs. Ingalls, Douglas, Finlay, Channing and Hammond formed the committee which cooperated with the Bureau of Mines in the compilation of Rules and Regulations for Metal Mines, which was published by the Bureau as Bulletin No. 75. It will be recalled that this committee was originally appointed by the American Mining Congress. Its "Rules and Regulations for Metal Mines" is a notable work which is in the possession of nearly every metal mine operator in the United States.

It seems to be the opinion of many persons in touch with the mining industry in Washington that this committee will be able to formulate a bill which will be the basis for legislation which it is hoped to secure during the session beginning in December of this year.

## UNCLE SAM MUST PREPARE TO MEET CUSTOMERS' NEEDS

"The customer who comes into Uncle Sam's store comes to buy what he wants, not what the men behind the counter have to sell. So, if our respected uncle is to prove himself a good shopkeeper, he must have on his shelves the goods that the customer nations need, and he must have right facilities for delivery." (Extract from the address of C. L. Dering at the Mining Congress Convention.)

## FUEL PANIC GROUNDLESS BUT SOME AUTHORITIES MISJUDGED THE SITUATION

Both press and public have been criticised in connection with the anxiety which prevailed early in the winter in regard to coal supply. It is claimed by some that the newspapers featured unduly the prospects of a coal famine. The public also is blamed for allowing itself to be thrown almost into a state of panic when in reality real no reason for such confusion existed. Figures now available show conclusively that 10 per cent more anthracite coal was delivered to consumers during 1916 than was the case during the preceding year. The production of anthracite during 1916 was less than in 1915. Very apparently the quantity of coal in storage at the beginning of 1915 was larger than was generally recognized. That there was nothing unnatural in the attitude of the newspapers and the public is indicated by a review of the bulletins of the Anthracite Bureau of Information. This bureau is maintained by anthracite operators and it is very evident that even so well informed a source had fears of a serious coal shortage.

In the July bulletin of the Anthracite Bureau it is stated that "The general shortage of labor and the small stocks of coal on hand undoubtedly will make it difficult to supply the market next winter. If there is a repetition of last season's difficulties in railroad transportation the situation will be rendered still more acute. Under the circumstances consumers are warned to place orders now if they would insure themselves of their winter's supply."

A month later warnings were renewed as follows: "The decrease of more than 200,000 tons in July shipments as against those reported for June lends force to previous warnings that it may be difficult to supply the winter demand."

"The demand is far in excess of supply," says the October bulletin of the Anthracite Bureau. "The shortage of labor and the small stocks of coal on hand," says the bulletin, "together with a possible limited supply of cars, emphasizes the fact that there may be a scarcity of coal this winter, especially if the winter proves to be a hard one."

## Seattle Station Opened

Hastily printed invitations were received in Washington early last month to attend the formal opening of the Seattle mining experiment station, January 12.



## SCHOLZ WRITES "REVIEW OF REVIEWS" AS TO ARTICLE

Referring to the article in the January Review of Reviews, which discusses the Mining Congress paper of Dr. Geo. Otis Smith and C. E. Leshner on "The Cost of Coal," Carl Scholz has written the Review of Reviews as follows:

"In your January number on page 91, I note an article on 'The Cost of Coal,' discussing the article prepared by Dr. George Otis Smith and read before the Chicago meeting of the American Mining Congress on November 14 last.

"It has been my privilege to have served as president of the American Mining Congress for the last three years, and I have taken an interest in a broader sense in the coal industry, particularly on account of the very depressed condition the industry has been in and realizing that unless the smaller operators were enabled to make their properties profitable to the extent of paying usual rates of interest on money involved in any enterprise, in addition to dividends to which an industry as hazardous as mining is entitled, they would be wiped out of existence and monopolies would succeed them, which is a condition not desired by the country at large.

"In 1910 I was sent to Europe as consulting engineer for the Bureau of Mines to make some investigations on operating and labor conditions, and I used the information obtained in the preparation of a pamphlet entitled "A Statement of Facts," of which a copy is herewith enclosed. The tables shown on pages 13 to 24 will be particularly interesting to any student, and I want to call especial attention to the small amount of net revenue which was obtained in the year 1909 in Illinois and Indiana, two of our principal central western States, as compared with Westfalia. Also to the relatively high cost and selling values at the pit mouth in Westfalia compared with Illinois and Indiana. Even at present prices coal in this country is selling much below the selling prices in Germany, England or France. I, of course, refer to conditions existing prior to the war; and, if anything, considering the high wages, coal is much too cheap—in fact, its cheapness is responsible for the lack of sufficient interest by the smaller consumers to obtain the best results.

"As a member of a committee which first laid this matter before the Federal Trade Commission, I am convinced that cooperative measures are the only channels for relief. Just as you state at the top of the second column of page 92, the need for reducing transportation charges by shortening the length of haul is the most immediate solution of the problem. With coal fields at its doors, the central western States have no need for eastern coals carrying a freight charge of \$2 or \$3 per ton, when by treatment the native coals could yield by-products much more valuable than the raw coal was in the first place, in addition to furnishing a fuel capable of performing in every way the service obtained from the higher grade fuels.

"As a rule, the daily press is not far-sighted enough to be willing to place these matters in an

intelligent manner before its readers. They seek sensational information and advocate the prosecution of imaginary trusts without knowing the real facts involved. The proper presentation, therefore, rests with the conservative publications which serve the entire country, and in this direction your magazine can render valuable and lasting service by studying the problem thoroughly.

"While no longer an official of the American Mining Congress, I am sure that body will be glad to supply you with information which cannot be disputed, as also will other coal mine operators and those familiar with the existing facts serve you with dependable data."

## ROAD COMMISSIONERS

### IN ALASKA REPORT

The Board of Road Commissioners for Alaska has been building roads in that territory since 1905. Up to July 1, 1916, it built 920 miles of wagon roads, 629 miles of winter sled roads and 2,210 miles of trails. Of late there has been some criticism of this roadbuilding, indicated as follows in the last annual report of the board: "Alaska abounds in mineral wealth, fish and road-commission critics." One cause of the criticism is the poor condition of some of the roads, which is explained in the report in detail. None of the roads built by the board was constructed for automobile traffic and the board does not encourage the use of automobiles on them, but there were, nevertheless, over 250 trucks and passenger cars in use at the close of the last fiscal year and a regular motor mail and passenger service was maintained between Valdez and Fairbanks during the summer.

"Much damage has been done to the roads by the use of heavy, narrow-tired trucks," the board says; recently graded roads which would be satisfactory for light traffic are plowed up by trucks before surfacing is completed and expensive repairs are thus necessary before the road construction is finished and maintenance begins. An instance illustrating the conditions is furnished by the following extract from the report of the board's superintendent at Nome: "This road for 500 feet was destroyed by being worked out by a mining and dredge company. The district attorney would not give us protection and I had the piece of road rebuilt. Inside of two weeks after it was reconstructed, they destroyed it again." These traffic conditions make the roadbuilders' work difficult enough in themselves, but in addition there are the troubles of construction where the local conditions are far from comparable with those of the States. For example, last summer it became necessary to build a road 5 miles long along a hillside, and at one point the operations of a hydraulic mining company showed that the material underlying the location consisted of 6 feet of gravel on the bed rock, 40 feet of clear ice on the gravel, and 2 feet of moss and tundra on top. The only practicable construction for this locality was to cover the roadbed with willow corduroy and surface the corduroy with gravel.



A CARTOONIST'S CONCEPTION OF  
H. C. ADAMS,  
at the Mining Congress Convention

**To Report on Iron Properties**

E. C. Harder, a geologist in the Government service assigned to work in the iron districts in the Lake Superior region, has been granted a three months' leave of absence in order that he may make a report on the geology of the properties of the Brazilian Iron Ore Co. These properties are in the interior of Brazil.

**Addresses Geological Society**

Frederick G. Clapp, petroleum engineer and geologist, of New York, addressed the Geological Society of America at Albany, N. Y., on December 28 on the two subjects, "Ethics of the Petroleum Geologist" and "Revision of the Structural Classification of Petroleum and Natural Gas Fields."

**MINERAL OUTPUT OF SEVEN  
STATES EXCEEDS \$300,000,000**

Mining in this district continues its extreme activity, says the Federal Reserve Bank at San Francisco in its report to the Federal Reserve Board. The mineral output of the seven States composing the district was valued at over \$300,000,000 in 1915 and, due to high prices for all metals and the increased activity in this industry, this figure should be largely exceeded in 1916.

The November petroleum production of 263,209 barrels daily is a decline of 3,311 barrels daily compared with October, while shipments of 310,008 barrels daily is a new high record and an average daily increase of 6,356 barrels over October. Crude oil stocks on November 30 totalled 45,914,181 barrels. It is estimated that California's petroleum production for 1916 is 93,000,000 barrels, an excess of more than 2,000,000 barrels over last year. Consumption, however, aggregates more than 103,000,000 barrels, stored stocks having in consequence been reduced by more than 10,000,000 barrels. The value of this year's petroleum production is placed at \$49,000,000. New wells opened during this year have been twice as many as last year.

**Radio Detectors**

Large profits which were made in the sale of pieces of galena suitable for detectors on the radio apparatus have been stopped by the manufacture of these detectors which permits of a big cut in prices. It is understood that galena for this purpose formerly brought as high as \$7 per crystal.

**Memorial Tablet for Dr. Holmes**

A fund of \$800 has been raised among the employes of the Bureau of Mines for the purpose of purchasing a memorial tablet for the late Joseph A. Holmes to be placed in the main entrance of the Bureau's new building at Pittsburgh.

**WITHDRAWALS AND RESTORATIONS**

A summary of the principal withdrawals and restorations, in acres, during the period from March 4, 1913, to December 31, 1916, as compiled by the Geological Survey, is as follows:

|                   | <i>Outstanding<br/>withdrawn<br/>March 4, 1913.</i> | <i>Withdrawn<br/>during<br/>period.</i> | <i>Restored<br/>during<br/>period.</i> | <i>Outstanding<br/>withdrawn<br/>Dec. 31, 1916.</i> |
|-------------------|-----------------------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------------------|
| Coal.....         | 65,410,464                                          | 668,664                                 | 20,645,156                             | 45,433,972                                          |
| Oil and gas ..... | 4,817,706                                           | 1,656,064                               | 692,397                                | 5,781,373                                           |
| Phosphate.....    | 3,367,378                                           | 489,601                                 | 1,350,581                              | 2,506,398                                           |
| Potash.....       | 133,829                                             | 211,384                                 | 214,584                                | 130,629                                             |
| Power site.....   | 1,857,258                                           | 769,682                                 | 198,682                                | 2,428,258                                           |
| Public water..... | 86,216                                              | 113,074                                 | 2,862                                  | 196,428                                             |
| Total.....        | 75,672,851                                          | 3,908,469                               | 23,104,262                             | 56,477,058                                          |



### Those Who Smelt Antimony.

Antimony is smelted in the United States by the following firms:

Magnolia Metal Co., 115 Bank St., New York City. Smelter at Matawan, N. J.

The Pennsylvania Smelting Co., Pittsburgh, Pa.

Great Western Smelting & Refining Co., Chicago, Ill.

Western Metals Co., 625 Security Building, Los Angeles, Cal.

Chapman Smelting Co., 409 Battery St., San Francisco, Cal.

International Smelting Co., Wm. Wraith, Mgr., Salt Lake City, Utah.

Antimony Smelting & Refining Co., Central Building, Seattle, Wash.

Besides these the American Star Antimony Co. is extracting antimony electrically at Gilham, Ark.; the Hoyt Metal Co., St. Louis, Mo., smelts more or less antimony ores in conjunction with lead ores to make antimony lead; and the John Finn Metal Works, San Francisco, Cal., has also treated some antimony ores.

### KENTUCKY CONTINUES TO CLIMB AMONG COAL-PRODUCING STATES

The steady climb of Kentucky among the coal-producing States has been largely due in the last five years to the remarkable developments in the eastern fields, particularly in Perry, Pike, Letcher, Harlan, and Floyd Counties, and to the additional output from both old and new developments in these counties and in Johnson County is due the greater output in 1915 compared with that in 1914. Eastern Kentucky's high-volatile coal, particularly that from some of the easternmost counties, has been found to be excellent for making by-product coke and for use in gas plants, and large quantities are each year shipped for these purposes to the Chicago district, to points in Indiana, Illinois, and Michigan, and to St. Louis. The coal from eastern Kentucky is also sought for domestic use and for steam. The greater part of the coal from these counties finds a market north of Ohio River and meets in competition the coals from Ohio, Pennsylvania, Indiana, and West Virginia.

### BIG DEMAND FOR PHOSPHATE ROCK AFTER WAR IS FORESEEN

The phosphate rock industry during 1915 was in the same bad condition, especially in Florida, that prevailed in 1914. Soon after the outbreak of the war in Europe the phosphate-mining companies of Florida, including not only those that produce the higher-grade rock for export but also those that supply the domestic trade, either curtailed production very materially or suspended mining.

Shipments of phosphate rock to Germany, hitherto a large consumer, have almost entirely ceased, and those to other European countries

have been seriously interrupted. Business has been greatly retarded by lack of steamers and by increased freight rates, and there seems to be little likelihood of improvement till peace has been declared.

The great demand for sulphuric acid, especially toward the end of 1915, has also been a factor in curtailing the production of domestic phosphate rock. Acid prices have ranged so high that the manufacture of acid phosphate has shown a tendency to decline.

If the demands of German agriculture return to a normal condition after the war, and there is no apparent reason why they should not, the present lack of phosphate fertilizer in Germany, due in large part to stoppage of imports of phosphate rock, will probably be made up in efforts to bring the soil back to its former productive state. These efforts should create an increased demand for phosphate rock and tend to recoup to some extent the losses suffered by American producers, who will probably be given the preference over French and English producers.

### AMERICA PART OF HEAVEN INVESTIGATOR CLAIMS

The Geological Survey is the recipient of some peculiar requests. Recently the Survey was asked to proclaim to the public that America is "the good part of heaven." The writer explained that, in endeavoring to find the oldest known idea of God, he had found an ancient Egyptian record which made it very clear that America is a portion of heaven.

### LIGNITE MINES IN TEXAS BEING WORKED ACTIVELY

Commenting on mining conditions in the Dallas district the Federal Reserve Board says in its October report:

"The lignite mines of south Texas are being worked extensively, and a very superior grade of lignite is being produced. There is a good demand for the output at the prices of \$1 to \$1.25 per ton at the mines.

"Mining companies are operating on full time, and a number of new mines are being opened in Arizona and New Mexico. Good prices for copper have kept that industry active, and the mines of New Mexico are unable to get sufficient labor to keep up with their orders."

### CHEMICAL INDUSTRY BOOMS IN THE SAGINAW VALLEY

The remarkable development of the chemical industry in the Saginaw Valley of Michigan greatly surprised W. C. Phalen of the Bureau of Mines, when he visited there recently. Such enterprise as is being shown in the Saginaw Valley, Mr. Phalen says, is rapidly making the United States independent of foreign countries in the matter of chemical supplies.

## JAPANESE COMPANY TO WORK IRON PROPERTY IN CHINA

A prospectus has been published by the promoters of the Oriental Iron Smelting Company, which is to work the Taochun Iron Mine, Anhut, China, by taking over the concession obtained by the Chino-Japanese Industrial Development Company from the Peking Government, according to advices from Yokohama to the Department of Commerce.

The proposed company, according to the prospectus, which is reviewed by the *Japan Times*, will have a capital of 25,000,000 yen (\$12,462,500), with which to complete one plant for the production of 170,000 tons of pig iron annually, and another for the production of 150,000 tons of steel materials annually out of waste iron ores.

The company will depend principally upon the Taochun mine for its raw material, but ores will also be imported from Chosen and elsewhere for the purpose of maintaining a regular supply. The pig iron produced will be used in the manufacture of steel materials not exceeding 5 inches in size and under 1/2-inch in thickness, for which there is the greatest demand in Japan.

The construction of works and plants will cost 18,680,000 yen (\$9,311,980). The whole amount is to be expended in three years, and at the end of the third year the buildings will be completed and the plants fully installed. It is planned, however, that half the required capital shall be paid in and the other half raised by floating a loan, rather than by sale of shares.

The zinc refining industry of Japan is of recent origin. Up to 1910 all the zinc required was imported. The zinc refinery as an industrial enterprise in Japan, says the *Japan Advertiser*, owes its origin to the founding of the Mitsui Zinc Refinery in Miike, Kyushu, in March, 1910. In the same year the Osaka Zinc Refining Company, in Osaka, and the Nippon Zinc Electric Refining Company, in Isojima, Niigata Prefecture, were started.

Since the outbreak of the European war, with the stoppage of the usual foreign sources of supply, the output of the three companies mentioned has increased to a total of 20,000 tons, or two-thirds of Japan's requirements. About 10,000 tons are being imported at present.

It is said that there are rich veins of zinc ore in all parts of Japan. Up to 1910, ore containing less than 40 per cent of zinc was thrown away and only the finer grades containing more than 40 per cent were exported.

## CROW'S NEST COAL MINES BECOME INCREASINGLY IMPORTANT

The Crow's Nest coal mines of British Columbia are important because of their unusually large area and great productiveness, and on account of the rapidly growing railroad enterprises and the mining and smelting industries that depend on them for supplies of fuel, according to the advices of the Department of Commerce.

The Crow's Nest coal fields are 350 to 400 miles from the coast in the Rocky Mountains. The summit of the range is the dividing line between the section of the field situated in East Kootenay, British Columbia, and the part in southwest Alberta. The property of the Crow's Nest Pass Coal Co. is on the western slope of the Rocky Mountains, while that known as the Blaimore Frank district is in the eastern foothills of the same range. The coal fields cover more than 200 square miles.

The coal and coke shipments to the United States in the past six years were: 1910, coal \$2,296,915, coke \$43,755; 1911, coal \$677,813, coke \$8,846; 1912, coal \$1,629,205, coke \$251,453; 1913, coal \$1,736,211, coke \$257,378; 1914, coal \$1,282,882, coke \$276,694; 1915, coal \$961,930, coke \$118,694.

Besides the Crow's Nest Pass, there are in the Fernie consular district the following coal mines: Corbin Coal & Coke Co., Corbin; Hosmer collieries, Hosmer; Hillcrest collieries, Hillcrest; West Canadian collieries, Blaimore; McGillivray Creek Coal Co., Coleman; Franco-Canadian collieries, Frank.

## AMMONIA PRODUCTION OF U. S. MAKES BIG JUMP IN 1916

Increased production of ammonia from 197,000 tons, in 1915, to 270,000 tons in 1916 is one of the striking developments of the year just closed. The fact that there has been an increase of 37 per cent in the production of ammonia is of interest in connection with the controversy as to whether the nitrogen produced from coal is a sufficient and reliable source of supply in time of war or whether it is necessary to secure nitrogen from the atmosphere by fixation. It has been stated by General Crozier before the House Committee on Military Affairs that the requirements of the War and Navy Departments in time of war would be 180,000 tons of nitric acid. A ton of nitric acid is equivalent, roughly, to a ton of ammonium sulphate.

## AMERICAN CLAY EXCELS BEST GERMAN PRODUCT

C. G. Chevalier, Knickerbocker Building, Baltimore, Md., has reported to the Geological Survey that he has a clay known as "K-10" which is slightly superior to the famous Klingenberg clay formerly imported from Germany, which is suitable for use in the manufacture of crucibles and lead pencils.

One of the subjects in the symposium on Petroleum held by the Geological Society of America on December 27-29, was a paper by Myron L. Fuller of the Associated Geological Engineers on "The Appalachian Oil Fields."



# IRON BLAST FURNACES MAY SUPPLY POTASH NEEDS OF UNITED STATES

**Metallurgists See Important Verification of Their Theories in Recent Experiments at Bethlehem Steel Works—Fact that Potash is in Gas Rather than Slag Important**

Recovery of potash as a by-product of the iron blast furnaces in an amount equal to the total quantity being used by the United States is a possibility of the near future, according to conservative metallurgists in Washington. That a very substantial recovery of potash from blast furnace operations is possible has been believed for some time by these specialists but in the light of the systematic experimentation which has been conducted at the Bethlehem Steel Works, the possibilities of the recovery of potash are seen to be materially greater. The recent announcement of the results of his experiments by W. J. Wiser, blast furnace superintendent of the Bethlehem Steel Works, has served to give great impetus to the thought which is being given the matter by Government specialists.

One of the developments of the Wiser experiments, to which much importance is being attached here, is that such a large percentage of the potash in the ore is given off in the gases, while a comparatively unimportant percentage goes into the slag. Experiments conducted heretofore have shown a much larger percentage of the potash in the slag, and it is gratifying to know that in actual operation a larger amount goes into the gases from which the recovery of potash is a much simpler matter.

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## Uncle Sam's Maps at a Premium.

That Uncle Sam's topographic maps are appreciated by public-utility corporations is shown by the fact that telephone companies throughout the United States are constant purchasers. These companies send frequent orders to the Geological Survey of the Interior Department for its maps in lots of 250 or 500, and occasionally when some big contract has been landed as many as 1,000 maps are ordered at a time for the use of the engineers and linemen. Some electrical supply companies keep complete sets of the maps of areas in States in which they expect to do extended work, and when they hear that contracts are to be let for such work they refer to these maps, and with the "lay of the land" before them can tell at a glance the character of the work that will be required, and can make their bids promptly and intelligently. The telephone officials who are "using the maps extensively" state to the Survey that they are of "indispensable value" in their work.

## MINE SUPPORTS MAY BE SUBJECT OF INVESTIGATION

An investigation of the whole question of mine supports may be undertaken during the next fiscal year by the Bureau of Mines if nothing interferes with the present plans of George S. Rice, the chief mine engineer. There is a demand for more accurate information with regard to the strength of the coal left in pillar as well as the strength of various supporting materials, including concrete and brick arching. There is much indefiniteness as to the amount of stress thrown on artificial supports by rock movements. This feature of the problem will receive special attention.

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## Issues New Bulletin

The Jeffrey Manufacturing Company of Columbus, Ohio, manufacturers of coal mining machinery, has added another improvement to the list of Jeffrey locomotive features, in its new Arcmaster and Solenoid Switch, which has been designed to eliminate punishment of the fingers and contacts on the controller drum, due to the heavy duty of large controllers necessitated by the demand for larger motor equipment.

The Arcmaster is mounted on top of the standard controller, takes the place of the controller handle and controls the electric circuit of the operating coil in the solenoid switch, which is mounted in a convenient place on the locomotive outside of the controller casing. A movement of the Arcmaster handle to operate the controller, for starting, first closes the solenoid switch which closes contact between the controller and the trolley. A reverse movement of the Arcmaster handle to throw the controller off, first opens the solenoid switch, and the controller drum is then thrown to the off position without breaking any current.

The new equipment eliminates all burning of the contact fingers and arc deflectors of the controller, thereby reducing the cost of upkeep of control and increases safety of locomotive operation, by eliminating all chances for the controller to fail to open the circuit.

The Arcmaster is a standard equipment on all Jeffrey Trolley Locomotives about 4 tons in weight, and can be applied to any make of controller without necessitating any radical changes.

A free copy of *Bulletin* No. 204, fully illustrating and describing this new apparatus, can be obtained by writing to the home office of the Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio, or to any of their branch offices.



A CARTOONIST'S CONCEPTION OF  
COL. H. E. GOODMAN  
at the Mining Congress Convention

### HALF OF ANTHRACITE COAL IS SOLD IN SMALL LOTS

"About half of the anthracite and around 15 per cent of the bituminous coal is retailed in less than carload lots, and the greatest number of individuals are directly concerned in the marketing of this portion, regarding the profits on which there is the widest divergence of opinion." (Extract from the address of Geo. Otis Smith at the Mining Congress Convention.)

### Alaska Would Hold Exposition

Juneau is planning to stage an Alaska Purchase Exposition next summer. Requests for Federal assistance toward making this exposition a success have been received here.

### UNDER-WATER COAL STORAGE POSSESSES MANY ADVANTAGES

Advantages accruing from the storage of bituminous coal under water are becoming more and more apparent and much larger quantities of coal are being stored in this manner, according to information reaching the Geological Survey. The fact that this method of storage relieves the danger of fire and prevents the deterioration of coal, as well as eliminating expense for insurance, is causing it to be encouraged by the Government's coal specialists.

### COAL BUSINESS ACTIVE IN THE BITUMINOUS FIELD

The coal business is quite active at prices somewhat under what they were a month ago, according to a report to the Federal Reserve Board from its bank at Cleveland. The freight embargo is being felt in this industry. Both coal and coke trades are looking forward to 1917 as registering the largest and most uniformly profitable business ever experienced. This view is based on the fact that six and twelve months contracts are now being concluded with large consumers at prices ranging 50 cents to \$1 a ton over the contract prices realized for the 1916 output.

Oil and gas interests are prosperous. In some instances prices being paid for oil are the highest ever recorded. Great activity is taking place in the Kentucky oil fields. Production is increasing in that district and considerable money is going there for investment. The clay industry is active in all its branches.

### Takes Up Graphite Work

H. G. Ferguson of the Geological Survey has succeeded E. S. Bastin in the work being done on graphite. Mr. Bastin is spending a year in private employ in South America.

### Electric Radiators Praised

The subject of mine heating is one which at present is commanding considerable attention, and, while not differing fundamentally from other heating problems, does present certain difficulties necessitating additional precautions. The following features, while not essential, are certainly desirable and are to be considered when planning the heating system of a mine: Safety and lack of danger from fire; reliability and ease of control; low cost of installation; economy of space; flexibility and control; ease with which the heating system from one section can be discontinued and moved to a new location; cost of operation.

Heating by electricity at once covers many of these points, and the electric radiators manufactured and sold by the Lee Electric Radiator Company (7031 Stewart Avenue, Chicago) takes care of them all, according to assertions made by the manufacturers.

The heating element is immersed in an oil similar to that used in transformers absolutely preventing the burning out of the coils. Since the whole is inclosed in a standard pressed steel radiator (the same as used in steam heating) all danger from fire is eliminated. It is far safer than the electric light.

Inasmuch as no steam pipes are required, a wire connecting radiator to source of electric current being sufficient, the cost of installation is a minimum. The running of steam pipes through a mine, on different levels, keeping them out of the way, is an expensive job. With electric radiators, the necessity for steam traps is done away with.



## TWO "GEMS" ARE ADDED TO BUREAU OF MINES LETTER COLLECTION

A surprising number of letters containing amusing questions and absurd requests are being constantly received by the Government Departments. Within the last few days the Bureau of Mines has been in receipt of two letters that might be termed "gems" in their extensive collection of communications of this class.

Here are a few of the questions asked in a 1,000 word letter.

"Does a visible difference exist between the fine colloidal bodies as seen by the aid of the ultra microscope, or are the differences assumed to exist from the fact that in the mass they constitute dissimilar matter?"

"Have enzymes been demonstrated to consist of, or contain, corpuscular bodies?"

"Are corpuscular bodies, as seen by the ultra microscope, spherical or in contact?"

"Do you believe that corpuscular bodies and electrons are identical?"

"Do you believe that there exists in the center of the corpuscular bodies nidus's similar to the centrosome's of cell life?"

"Would you consider it proper to say that the centrosome was a corpuscular body?"

"What is your opinion of Plato's definition of the worlds soul as being an immutable intangible colorless formless essence that is only visible to the mind?"

"If the nidus of the corpuscular body was composed of nonether (an essence) revolving on its axis, and surrounding this sphere was a film of ether—would the law of opposites cause this film of ether to revolve in an opposite direction to that of the nonethereal sphere—or would the attraction of gravity or friction cause it to revolve in the same direction but at a decreased speed—or would the fact that nonether has no extension permit the ethereal envelope to remain in a static condition?"

"If energy, in the form of electricity, is competent to enter into a chemical compound, would you consider from that fact that energy and matter are identical?"

"What do you think the ancient philosophers and alchemists meant when they referred to the missing link, the philosopher's stone, and the transmutation of metals?"

The other correspondent referred to above styles himself as the only personal mineral divining rod in the world. He claims to have some remarkable powers which enable him to trace veins and to discovery of ore bodies. He writes the Bureau of Mines as follows:

"Gravitator of the World Elements.

"I discovered about the year of 1900 that, I am a Personal Mineral Gravitator (or a Personal Mineral divining-rod.)

"The elements of the earth are visible to me, with their affinity. I discover where the fissure is, I have felt fissures about a mile away. I eye size the fissures, and, estimate about how big the ore shoot is.

"I can feel the fissures of the earth, the difference strength of them, I can stake out the length, the difference in width, make surface

survey, calculate the dip, and, estimate at any depth where the intersection is at.

"I have a specific gravitation inspiration, the earth affinity controls my breathing, the fissures in the difference places, has different strength, and, it pulls my breathing at a different speed, and strength.

"I discovered this law, in Anchor, N. Mex., in a small mining town, near the Colorado line, it was erected in Denver, Colo. and northern New Mexico. It is on record in Taos, N. Mex.

"I discovered the science in the Jumbo drift while I was waiting for a forked stick divining rod to locate the veins with. I stepped up on the edge of the vein, and, I discovered there was a different feeling at the different places I was standing at. My curiosity was emotion to examine the ground to see if I could realize the different feeling of the earth, and, if I could feel the difference between the country rock, and, the vein, I stepped back and, standardized myself, and, then I slowly advanced up on the vein, and, found there was a different feeling there between the country rock, and the vein, and, I could detect the edges of the vein.

"I would like to have this on United States record."

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### Magnesite in California

Magnesite is a carbonate of magnesium ( $MgCO_3$ ), having, according to Dana, a specific gravity of 3 to 3.12, and a hardness of 3.5 to 4.5. It is somewhat heavier than calcite (2.714 specific gravity), and is about one-third harder, the hardness of calcite being 3. It contains 52.4 per cent of carbon dioxide ( $CO_2$ ) and 47.6 per cent of magnesia ( $MgO$ ).

As it occurs in the California deposits, magnesite when comparatively pure is ordinarily a beautiful, white, fine-grained rock, with a conchoidal fracture that looks like a break in china. It will take a fine polish and when so treated is an opaque white. A portion of the magnesite occurs in a fine powder in what seem to be decomposition cavities and upon surfaces exposed to weathering.

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### Greeks Thought Earth a Sphere.

A number of the Greek philosophers regarded the earth as a sphere. Among them the most prominent was Aristotle, who used modern arguments for this thesis, such as the gradual disappearance of a ship at sea from hull to mast, the circular shadow cast by the earth upon the moon at eclipses, and the alteration in the aspect of the heavens as seen from different latitudes.

The spheroidal form and rotation of the earth formed an essential portion of the Copernican system. Copernicus lived from 1473 to 1543. The globular figure of the earth was not accepted by the public at large until Columbus had crossed the Atlantic and Magellan's expedition had circumnavigated the globe. From that time onward it has been accepted by all scientific men and most others.

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## HOLMES MEMORIAL VOLUME EXCITES FAVORABLE COMMENT

That men prominent in the mining industry throughout the country think favorably of the issuance of a memorial volume for the late Dr. Joseph A. Holmes, the first director of the Bureau of Mines, is indicated by testimonials contained in letters being received by the American Mining Congress. A few of these letters are reproduced as follows:

"New York, January 3, 1917.

"I have received and read the memorial volume on Dr. Holmes. The expressions of admiration for his character and works, by men who knew him so well, are not exaggerations.

"He himself was not only a thinker and theorist, but he was not content till he had put his conceptions into practical form. Hence the magnificent technical and relief work done by the Survey under his instigation.

"Inspired by the spirit of the first director, and under the able guidance of his successor, the staff of the Bureau cannot fail to do even more efficient work in the future than they have in the past.

"(Signed) J. DOUGLAS."

"Salt Lake City, Utah,  
January 2, 1917.

"I have examined with real pleasure my copy of the beautiful Holmes Memorial Volume which reached me a few days ago, and I want to compliment you upon the fitting and artistic manner in which you have carried out the happy conception of such a monument to the life work of Dr. Holmes. I trust that this memorial will stimulate interest in the Bureau of Mines, so that its beneficent activities may be continued and extended.

"(Signed) JOHN DERN."

San Francisco, January 1, 1917.

"Your letter of December 20 and the Holmes Memorial Volume reached me in due time. The memorial is quite attractive, very interesting, and in every way an appropriate tribute to a great and good man who did noble service for science and for his country.

"(Signed) D. C. JACKLING."

"Kemmerer, Wyoming,  
December 28, 1916.

"I am very glad to acknowledge receipt of the beautiful volume preserving the record of the many eloquent and deserving tributes paid to Dr. Holmes, at the memorial exercises held at San Francisco, September 21, 1915.

"I shall treasure and preserve it. It is worthy of a place in any library, as well for its worth as an example of eloquence as for the worthy character it portrays.

"(Signed) P. J. QUEALY."

"Cleveland, Ohio,  
December 30, 1916.

"I have just been looking over the Holmes Memorial Volume and am very much pleased with the way it was gotten up, but more particularly on account of the evidences of high regard in which Dr. Holmes was held by so many eminent and well known men. This is great gratification to his friends and a worthy tribute to a most deserving man.

"(Signed) W. G. MATHER."

"Douglas, Ariz.,  
January 8, 1916.

"The Holmes Memorial Volume was received, and is very much appreciated indeed. I think it is just what it should be.

"(Signed) J. S. DOUGLAS."

## NEW PROCESS FOR CRACKING OILS HAS BEEN DEvised

Information has reached Washington from a reliable source, that a process for cracking oils has been developed in the West which will have an important influence on the refining of oil throughout the country. It is said to possess advantages over the Burton, Rittman and other methods of cracking oil. The development of the process has been conducted in an isolated refinery in a western State. Coal-gas retorts have been used to treat the crude oil. Recovery of benzol, toluol and of a very rich gas has resulted. It is stated that the process does not involve the use of special apparatus.

## BUREAU OF MINES HAS MORE THAN 30 BRANCHES

A collection of photographs showing all the buildings and offices of the Bureau of Mines throughout the country is being made at the direction of Van H. Manning, the director. The Bureau of Mines has branches in more than thirty different places.



# LAKE SUPERIOR OPERATORS INTERESTED IN BENEFICIATION METHODS

Growing Scarcity of High Grade Ores Causes Attention to Turn to Improvement of Quality and Texture of Ores—Edmund Newton and Harlan Bradt  
Discuss Principles Underlying Various Treatments

Beneficiation of iron ores is one of the liveliest and most important matters of interest among Lake Superior operators at this time. Edmund Newton and Harlan H. Bradt, of the Mines Efficiency Company, of Duluth, have given Ernest F. Burchard of the U. S. Geological Survey some of their ideas in regard to this matter. A part of their contribution is as follows:

Since the earliest mining in the Lake Superior region there has been an effort to improve the quality and the texture of the iron ores. This is evident in selective mining, where the material blasted or picked down is, so far as practicable, only of the character desired. After breaking down the material pieces of waste are picked by hand from the ore, thrown into old openings or placed to one side, and later carried to the surface or to another part of the mine where they can be disposed of. Generally, at the shaft, the ore is dumped through a grizzly into a pocket or into a skip, the large pieces of ore remaining on the bars. These are sledged, both to facilitate handling in further transportation, to eliminate waste rock, and to make a more desirable ore for the furnaceman. In some mines underground sizing is purposely employed to separate the large pieces, which are known to be mainly waste.

When the ore reaches the surface it is frequently subjected to another screening operation before dumping into surface tramcars or pockets. Lean pieces are rejected by the landers. Furthermore, if the ore is stock piled, a man is often kept sorting out waste rock from the coarser material at the foot of the pile and sledging and separating pieces of attached ore and rock.

Crushing of iron ore has been adopted at numerous mines, and the advantages of crushed ore were early recognized.

Devices to facilitate hand picking have been used at two mines at least in Michigan, and one is presently in use at the Ohio mine, near Michi-

gamme, on the Marquette range. At the Helen mine, Michipicoten range, Ontario, Canada, the crude ore is crushed and screened and then passed over a picking belt to eliminate as far as possible pieces of pyrite.

## STEP NOT RADICAL ONE

It is evident that beneficiation of iron ores has, in a more or less crude way, been effective in the Lake region since the commencement of mining. It is of interest to call attention to this fact, inasmuch as it has been considered that the use of mechanical means of beneficiation is a radical step, whereas the Lake region, as a matter of fact, has been approaching such treatment of ore in a logical manner. The miner has unconsciously been practicing beneficiation of iron ore since the opening of the region. The step from crude means of sorting and breaking ore to mechanical processes adapted to the same purpose may be likened to the step from shoveling by hand to steam shoveling stock piles and mechanically loading ore underground.

The advance to methods of beneficiation on a large scale has been due to the desire to make available deposits of material below commercial grade—to treat parts of high-grade deposits which can be easily and cheaply mined but which if not recovered in the first mining operation will thereafter be inaccessible—in general, to practice efficiency and conservation. To a small extent some of the more farsighted companies have been prompted to investigate methods of beneficiation because of the approaching exhaustion of the supply of high-grade ore in the region.

The possible improvement in grade of iron ores by mechanical means has been under serious consideration in the Lake Superior region since 1888. At that time John C. Fowle installed a small magnetic separation plant on the Marquette range at the Michigamme mine, Michigamme, Mich. The material treated was lean amphibole-magnetite rock. In the Transactions of the American Institute of Mining Engineers (Vol. 19, p. 62), Mr. Fowle states that in 1889 there were shipped from this property 11,000 tons of concentrates carrying between 60 and 65 per cent iron. In 1890, there were shipped 15,000 tons. The plant had a daily capacity of 180 to 200 tons. The material was crushed, treated on dry magnetic separators, and loaded on cars at a cost of 18 cents per ton of concentrates. The recovery of concentrates varied



from 50 to 70 per cent. The tailings carried from 21 to 24 per cent iron. The reasons for discontinuing this operation cannot be ascertained.

About 1890 a concentrating plant was installed at the Groveland mine, Menominee range, 4 miles east of Randville, Mich. It was intended to treat a uniformly hard hematite ore mixed with diorite, containing 48 to 50 per cent iron. Rather fine crushing was necessary, and it was hoped to produce a concentrate carrying approximately 65 per cent iron, dry, and lower in phosphorus than the crude ore. Jigging and treatment on slime tables was tried, but after a short period of operation, work was suspended and never resumed. (This information was obtained through private communication.)

#### LEAN ORES FORGOTTEN

In 1891, N. H. and H. V. Winchell, in predicting the future use of the lean magnetite ores of the Gunflint and eastern Mesabi range, in Bulletin 6 of the Minnesota geological and natural history survey, mentioned that material of similar character had been concentrated by jigging at the Chateaugay mines, Lyon Mountain, N. Y., and also at the Croton mines in Putnam County, N. Y., and in Pennsylvania and New Jersey. They suggested a similar treatment for this Minnesota material. Shortly afterward, the present productive or high-grade portions of the Mesabi range were opened, with the result that naturally rich ore was available in quantity and with mining conditions hitherto undreamed of. Concentration of the lean magnetites was consequently forgotten for many years.

In 1899, L. M. Hardenburgh installed a small jigging plant for the Pewabic Mining Company at its Pewabic mine, near Iron Mountain, Mich. Mr. Hardenburgh describes this plant in the Transactions of the Lake Superior Mining Institute, volume 6, page 23. The material treated consisted of fragmental iron ore contained in a sandstone. The fragments of ore were rounded and waterworn and their distribution throughout the sandstone was fairly uniform. They varied from the size of a pea to masses several hundred pounds in weight.

The material as hoisted from underground was passed over a grizzly, with bars spaced  $1\frac{1}{2}$  inches apart. The oversize was hand picked, the clean ore and clean rock being separately removed. The remainder was crushed in a jaw crusher and rolls. After screening, it was treated on eighteen Hartz jigs. The capacity of the mill was approximately 300 tons a day. It is understood that this operation was discontinued on account of exhaustion of the ore body.

The next consideration of the possibilities of concentrating Lake Superior iron ores appears to have been in 1901, when Walter Barrows, Jr., Charles A. Purdon, and associates were exploring the sandy ores of the Arcturas property on the western Mesabi range, Minnesota. To determine whether this material was amenable to concentration, they sent a carload to Cedartown Ga., for treatment on log washers. The results were satisfactory, and they subsequently in-

stalled a small screening and jigging plant on the property. A screening plant was also installed by Chester A. Congdon and associates at the Holman mine near by. These plants demonstrated that a separation could be made between the ore and the sand.

In 1906 and 1907 a roaster was installed at the blast-furnace plant of the Atikokan Iron Company (Ltd.), Port Arthur, Ontario, to treat the high-sulphur magnetites from the Atikokan range. Blast-furnace gas was used to give the required heat. Sulphur was reduced from about 2.50 per cent in the crude ore to about 0.25 per cent in the roasted product. The roaster used was oblong in shape, supported on steel legs, and divided into sixteen sections, each containing separate combustion, roasting, and chimney chambers. The products of combustion passed through the ore to the chimney chambers, where they were drawn by exhaust fans into a chimney. The ore, which was fed from the roaster bins, remained in the roaster for 24 hours, each chamber holding 25 tons.

It is reported that a concentrating plant was built between 1900 and 1908 at the Jackson mine, near Negaunee, Mich., but this could not be substantiated.

The Oliver Iron Mining Company began experimental work on the possible treatment of the sandy ore of the western Mesabi range in 1907. This company erected an experimental plant on the shores of Trout Lake. Extensive experiments were carried on and a satisfactory method of treating this material was evolved.

#### THE JONES EXPERIMENTS

A series of metallurgical experiments were begun in 1908 at Iron Mountain, Mich., by John T. Jones. A cylindrical rotary kiln fired by a producer-gas flame was used to heat lean siliceous iron ore mixed with coal. It was found impracticable to obtain certain desired results, but it was possible to deoxidize, or metallize, the iron oxide below the fusing temperature of the gangue, and later to crush and separate the material magnetically. The producer-gas flame was soon abandoned and a powdered-coal flame used instead. Before introduction the ore was crushed. The Iron Mountain plant was operated intermittently from 1908 to 1911, when it was abandoned.

In 1908, a magnetic cobbing plant was erected at Moose Mountain, Ontario, where a metamorphic, relatively thick banded magnetite ore was coarsely crushed and separated on magnetic separators. From a crude material containing 35 per cent iron a concentrate was obtained carrying about 54 per cent iron.

As a result of the experiments made by the Oliver Iron Mining Company, at Trout Lake in 1907 and following years, a large washing plant was erected at Coleraine, Minn., which began operations in 1910. It has been in successful operation since that time and has been the model for several later plants. This plant consists of five units, each having a crude-ore capacity of approximately 7,000 tons in 20 hours. Each unit consists of the following con-



centrating apparatus: One 500-ton crude-ore bin; 1 grizzly, 12-inch centers; 1 trommel, 20 feet long, 1¼-inch round hole; 1 picking belt, 35 inches wide; 2 log washers, 25 feet long, steel; 3 settling tanks; 20 Overstrom tables.

At Moose Mountain, Ontario, a crushing and fine-grinding plant, followed by Grondal wet magnetic separators, was installed in 1911 and 1912. This plant was designed to treat the magnetic iron formation in which the gangue and the ore were intimately intermixed. The fine concentrate produced contained about 63 per cent iron and required agglomeration, and for this purpose Grondal briquetting kilns were used. Several changes have been made in the plants and in 1915 further experiments were being conducted.

In 1910 a series of tests were made at the Newport mine, Gogebic range, Mich., for which a Bradford breaker was installed, to disintegrate and screen low-grade cherty ore. The oversize of a 1¼-inch screen was hand picked on a moving belt.

The first installation for agglomerating iron ore in the Lake region was made in 1911 by the Northwestern Iron Company, at Mayville, Wis. Grondal briquetting kilns were used to briquet fine Clinton hematite from the mine and flue dust from the blast furnace near by.

The first drying plant to be installed in the Lake region was a rotary drier at the Hollister mine, Crystal Falls, Mich., which was completed in 1911 by the M. A. Hanna Company.

During 1912, a washing plant erected by the International Harvester Company at the Hawkins mine, near Nashwauk, Minn., began operations. This plant consisted of one unit similar to the Coleraine plant, except that no tables were installed.

In 1912, a small plant was erected by A. B. Coates at the Madrid mine, Virginia, Minn. The ore was mined underground. It was desired to remove a certain amount of sandy silica, which was mixed with the ore. A trommel and log washer were first installed. The log washer abraded the ore particles, producing an excessive amount of fine hematite, which was lost in the tailings. Consequently a separator invented by Mr. Wetherbee was installed.

In 1912, a drying plant for reducing excessive moisture in certain materials was installed by the M. A. Hanna Company at their Brunt mine.

Further metallizing experiments were made by John T. Jones at Republic, Mich., in 1912, at a plant built during that year. Bruckner rotary kilns were used in which to carry on the deoxidation, and, after metallizing, the material was crushed and separated on Ball-Norton and Dings magnetic separators. As the metallic product was too fine for convenient shipping and further treatment, it was attempted to briquet it under pressure. Operations were suspended in 1912.

#### EXPERIMENT STATION ESTABLISHED

During the season of 1912, a mines experiment station was organized at the School of Mines, University of Minnesota, Minneapolis, Minn. The purpose of this station was to aid the mining

industry of the State. On account of the activity in the concentration of iron ores, this investigation was taken up in detail. A testing plant was equipped with suitable machinery for the testing of various types of low-grade Minnesota iron ore. General investigations have since been made on the sandy Mesabi ore, on Cuyuna ores, on the lean magnetites of the eastern Mesabi range, and on the titaniferous magnetite of Cook and Lake Counties. A large number of tonnage tests have been made for many of the mining companies. Bulletins are published from time to time as data become available.

During 1910, 1911, and 1912, calcining experiments were made on the carbonate ore from the Magpie mine, Michipicoten range, Ontario, by the Algoma Steel Company. In 1911 and 1912 a calcining plant consisting of a 120-foot rotary calcining kiln, followed by two 60-foot rotary roasting kilns, was installed. Previous to the heat treatment the material was crushed to 1½ inches. In 1913 the two small kilns were dispensed with, the whole operation being performed in the 120-foot kiln. Five units are now installed, and the capacity is about 20,000 tons a month.

In 1913, two concentrating plants were installed by the M. A. Hanna Company, one at the La Rue mine at Nashwauk, on the Mesabi range, Minn., and the other at the American Boston mine, Diorite, Mich. Both of these plants included novel features of treatment. The La Rue ore was of the "sandy type," somewhat similar to the Hawkins ore. Instead of using the customary log washers, however, a Wetherbee separator and a Woodbury slime classifier jig were installed, in parallel, for testing. Wilfley tables were used to recover the fine mineral. The Wetherbee separator operates by a combination of centrifugal force and an uprising current of water. The fine sand rises with the water current and overflows, while the lumps, which are good ore, drop to the bottom and are withdrawn as concentrates. At the American Boston mine the ore was of a hard banded character, containing coarse particles of cherty silica as gangue. An extensive plant was erected with Richards pulsator jigs as the main concentrating units.

In 1914, another drying plant was erected by the Shenango Furnace Company at their Whiteside mine on the Mesabi range.

A new metallizing plant was built by John T. Jones in 1914 at Marquette, Mich. A furnace of the shaft type was used into which the ore was introduced from a rotary preheater, through which the waste gases from the furnace passed into a stack. At the close of 1915 experiments were still being conducted at Marquette, various changes having been made in the apparatus.

#### INCREASED ACTIVITY IN 1915

In 1915 considerable activity in beneficiation was shown. Two washing plants, consisting of single units of relatively standard type, including log washers and tables, were installed on the Mesabi range, one by Butler Brothers, of St. Paul, at the Quinn-Harrison mines, and



the other by the Cleveland Cliffs Iron Company at the Crosby mine. Both of these plants are near Nashwauk, Minn.

During 1915 the concentration of Cuyuna range ores was also begun. The Inland Steel Company installed a small washing plant consisting mainly of screens and log washers at the Thompson mine, Crosby, Minn. The Pittsburgh Steel Ore Company also installed a washing plant of considerable size at the Rowe mine, Riverton, Minn. At the time this plant was built, log washers and tables were installed to remove the sandy silica, but it was proposed later to install jigs for the purpose of removing the coarser chert. A small experimental washing and hand-picking plant was installed at the Cuyuna-Sultana mine to treat manganiferous iron ore.

In 1915 experimental work was begun on an extensive scale on the lean magnetites of the eastern Mesabi range. A large amount of this work was done by the experiment station of the Minnesota University School of Mines. In connection with this experimental work, two new types of wet magnetic separators were developed by the experiment station. On account of the favorable features of ordinary log washers in use on other types of Minnesota ore, magnets were attached to the bottom for use on this class of material. This machine, which is called a magnetic log washer, has been tried out in a very exhaustive series of tests and produces high-grade concentration and low tailings at a high capacity. The other type mentioned consists of a wash trommel with magnets attached to the outside of the drum.

#### METHODS OF TREATMENT

Several methods are in use commercially or experimentally in the Lake Superior region at the present time. The largest tonnage is treated by crushers, log washers, or similar machines, but some ore is jigged, some is dried, and some is calcined.

The character of material treated is exceedingly varied, and it is impossible here to give actual results of treatment. The "washing plants" seldom treat sandy ore below 40 per cent iron (dry), and they generally recover 60 to 75 per cent of the ore in the form of concentrates. These concentrates carry from 55 to 60 per cent iron (dry). These figures depend almost entirely on the character of the ore.

In order to understand the reasons for the difference in the character of the concentrating plants already described, it is essential to consider the character of the various low-grade iron-bearing materials of the Lake Superior region.

The productive Lake Superior iron formations are sedimentary in character. They were probably laid down originally either as cherty iron carbonates or as hydrous ferrous silicates and iron oxide. The conditions of deposition varied from time to time, giving rise to a banded formation consisting alternately of siliceous layers and layers mainly composed of iron minerals, or some gradation between the two.

Secondary concentration was effected by surface waters which first oxidized and hydrated

the iron carbonate and silicate. Then silica was leached out along channels of circulation. When this leaching had progressed nearly to completion, the high-grade ore bodies resulted which have produced the direct shipping ores on the several ranges.

By far the largest quantity of the iron-bearing formation has been more or less imperfectly acted upon by these processes of secondary concentration. Such material constitutes all but one class of the so-called low-grade iron-bearing material. The exceptions are the titaniferous magnetites of Cook and Lake Counties, Minn., which appear to be magnetic segregations in the Duluth gabbro.

A large factor in the retardation of secondary concentration seems to have been metamorphism by heat, pressure, or both. This presumably occurred while the iron was largely in the ferrous condition and produced the magnetic oxide of iron, and other mineral constituents, which withstood the further solvent action of the surface waters. Examples of this type of material are found abundantly on the eastern Mesabi range, the Gunflint district, the western Gogebic range, and at certain points on the western Marquette range, such as at the Michigamme mine. In other places, where this metamorphic action has not taken place, leaching proceeded very slowly or not at all. As a result, we have, today, relatively hard banded material consisting of layers of more or less siliceous hematite, sometimes containing considerable molecular water, and layers of relatively hard unleached cherty silica or rock. Examples of material of this character are the solid or partially decomposed taconite of the western Mesabi range, the relatively hard cherty ores of the Cuyuna and Gogebic ranges and the banded jasper and ore of the Vermilion and Marquette ranges.

When leaching had progressed farther than in the class of material just mentioned, but had not been entirely completed, we find what is termed, locally, "sandy ore." Such material consists of alternate bands of more or less siliceous, hydrated hematite interlayered with fine sand. The sand has resulted from the disintegration of the hard cherty bands, but has not been entirely removed. Examples of this type of material are found in the ore bodies of the western Mesabi range, lying principally west of Nashwauk and in minor quantities throughout the central Mesabi and on the Cuyuna range.

The discussion so far has been limited to materials which are low in iron on account of large percentages of silica. Other impurities occur in Lake Superior iron-bearing material, which either render them too low in iron to be shipped direct or else undesirable for furnace use. These impurities are principally phosphorus, sulphur, titanium, alumina, and moisture.

#### PHOSPHORUS ALWAYS PRESENT

Phosphorus occurs in greater or less quantity in all Lake Superior iron-bearing material. Its presence above certain limits causes a penalty



to be imposed by the furnace men. Sulphur occurs as sulphide of iron and as hydrous calcium sulphate at certain places in prohibitive quantities. Titanium occurs in the so-called titaniferous magnetites of northeastern Minnesota. Its presence presents blast-furnace difficulties. Alumina occurs in the so-called "paint rocks" of the Mesabi and other ranges. Although the iron content is relatively high, difficulties arising in the blast furnace prevent its use at the present time.

Moisture is present in greater or less quantity in all the ores; in some ores it runs as high as 16 or 18 per cent. This is often sufficient to lower the "natural iron" content below the merchantable limit, and high transportation rates from the Lake region to the furnaces prohibit the shipment of such large quantities of water per unit of recoverable iron.

As has already been shown, interest in the mechanical improvement or beneficiation of Lake ores dates back to small beginnings nearly thirty years ago. On account of the great draft upon the reserves of the high-grade ores, it is a subject of considerable importance at the present time. It will, therefore, be of interest to review the various methods of beneficiation now available.

It is evident that the character of treatment will depend on the type of material under the discussion and on the impurity to be removed. In general, the following principles of "beneficiation" will be found applicable either at the present time or at some future date for low-grade iron-bearing material of the Lake region.

*Thermal processes.*—(a) Drying—removes ordinary moisture and some combined water and is employed to facilitate the removal of clay, rock, and sand.

(b) Calcining—removes carbon dioxide from iron carbonates, combined water from hydrated hematites, and ordinary moisture. Under proper conditions the magnetic oxide is produced.

(c) Roasting—removes sulphur, carbon dioxide, combined water, and ordinary moisture.

(d) Agglomerating—used primarily for the purpose of preparing finely divided material for the blast furnace. Includes briquetting, sintering, and nodulizing. Removes sulphur, carbon dioxide, combined water, and ordinary moisture.

(e) Metallizing—reduces iron oxide to metallic iron without eliminating gangue. Incidentally accomplishes all that (a), (b), and (c) accomplish.

*Mechanical processes.*—(a) Hand sorting—to remove coarse rock.

(b) Crushing—reduces ore to size suitable for blast-furnace use, and is also used preliminary to other mechanical processes.

(c) Screening—removes large pieces of rock and fine sand.

(d) Classification—removes sand by means of currents of water of varying velocities.

(e) Log washing—removes fine sand.

(f) Jigging—removes larger particles of gangue than is possible by log washing. Certain types of jigs remove fine sand.

(g) Reciprocating tables—recover fine iron mineral from sands discarded by the processes named above.

(h) Magnetic separation—applicable to the commercial separation of the magnetic oxide of iron from gangue material. It is possible, but not commercially practicable, magnetically to separate certain hematites and limonites from their gangue.

(i) Miscellaneous processes—comprise dry concentration, electrostatic separation, flotation, and other processes which have been applied with more or less success to material of certain districts.

Certain materials may be of such character that a single simple operation may suffice to beneficiate them; others may require more complicated treatment, involving several methods.

From a technical standpoint, what can be accomplished by beneficiation will depend on the physical and chemical character of the impurity to be removed. In the sandy ores, silica in the form of fine sand can be largely removed by log washing. The bands of ore which are relatively soft and, on mining, break down into relatively small lumps, contain a certain amount of silica very intimately associated with the iron oxide. This can be readily seen in a thin section under the microscope, occurring as particles a thousandth of an inch in diameter or less. Silica, in this form, cannot be separated commercially from the hematite by mechanical means. Consequently, the grade of concentrates produced by log washing sandy ore or by jigging harder cherty ore will depend almost entirely on the grade of the ore bands or lumps. These in turn depend on the original iron content and on the amount of microscopic silica that has been removed by secondary leaching.

In magnetic ores there is microscopic silica in the ore bands and microscopic particles of magnetite in the gangue bands. Also there are certain silicates of iron in the gangue which are nonmagnetic, and in some localities, such as the western Gogebic, there is a certain proportion of specular hematite. With such material very fine grinding, 300 mesh and finer, will liberate a large proportion of the microscopic particles of gangue, and the microscopic particles of magnetite, which can then be recovered on account of their magnetic attraction. Iron occurring in this material, in the form of silicate or as hematite, naturally will largely be lost in the tailings. In general, with this material it may be said that the possible grade of the product will depend principally on the fineness of grinding.

The success of beneficiating low-grade iron-bearing material will depend not only on the grade of product and the recovery of concentrates that can be made, but on the cost of the finished product. Conditions are still governed by the price of available direct shipping ores, and any beneficiated product must be produced at a cost that will compete on an even basis at the furnace. With the growing scarcity of high-grade ores higher prices will undoubtedly obtain and more expensive beneficiation treatment will be justifiable.



# MINERAL OUTPUT OF PERU REACHES NEW HIGH LEVEL UNDER PRESENT DEMAND

## Department of Commerce Receives Detailed Report on Mining Conditions in South American Republic—Cerro de Pasco Company, Owned by Americans, Producing Copper at Enormous Rate

The great demand in the United States and the belligerent countries for copper and other minerals acted as a boom to the mining industry of Peru during the year 1915. Mines which previously had been shut down were reopened and large quantities of low-grade ore were handled as a result of the urgent demand and high prices for nearly all Peruvian metals, according to reports to the Department of Commerce from Lima.

The Cerro de Pasco Mining Co., American owned, continues to be the largest copper-producing mine in Peru. It handles about 75 per cent of the total production. The Backus & Johnston Mining Co., which is the second largest, turned out about 6,000 tons of copper during 1915.

The increased tonnage in bars and the decreased tonnage in matte and ores in 1915 is due to the operation of the new Backus & Johnston converting plant which was installed in 1914. About 75 per cent of the copper produced in Peru comes from the Department of Junin and 14 per cent from the adjoining Department of Lima, which mines are chiefly owned or controlled by American capital.

Stimulated by high prices for copper the mining companies increased their outputs, reaping the benefit of previous improvements and facilities. At the end of 1915 it is stated that the Cerro de Pasco Co. was producing copper at the rate of about 6,000,000 pounds per month. This company, which has a New York office, imports large quantities of machinery, tinned foods, lumber, coal, and clothing, mostly from the United States.

### HIGH FREIGHT RATES

There were decided fluctuations in the price of standard copper during 1915. The selling price, which is largely regulated by the Liverpool market, was in January, 1915, \$281.65 per ton for standard copper. It went up to \$391.36 in April, fell in August to \$324.83, and closed in December at \$410. This latter price was considered at the time very satisfactory. The price paid now for this metal (June, 1916) is, however, around \$603 a ton.

From the Callao-Lima consular district the copper exports to the United States during 1915 reached the highest figure in the history of the industry in Peru, amounting to \$14,198,799, against \$9,297,155 the preceding year.

One of the great drawbacks to the develop-

ment of this industry was the abnormal freight rates that obtained throughout the year. Not only were the rates between Callao and European and American ports abnormally high, but it was most difficult to procure sufficient cargo space on the limited number of ships plying between these ports.

The shipowners toward the latter part of the year would accept minerals for exportation based only on their value; that is, on copper in sacks with value not exceeding £25 (\$121.60) per ton the freight rate was £2 (\$9.73) Callao to Liverpool; and on copper valued at £90 to £115 (\$438 to \$560) per ton the freight was £3 2s. 6d. (\$15.56). In February of 1916 the freight on the same mineral increased to £6 15s. (\$32.85) a ton. The prevailing rate from Callao to New York on Peruvian minerals during the latter part of 1915 was between \$18 and \$23 per ton.

On metals valued at more than £100 (\$480) per ton a rate of 3 per cent was charged. In February, 1916, this charge went up to 7 per cent, and it was difficult to get sufficient cargo space at that rate. Consequently, producers of low-grade ores and low-priced minerals found it impracticable to ship.

### SILVER AND GOLD MINING

Most of the silver exported from Peru forms part of the copper shipments. Only a small portion is mined and shipped separately, as in silver bars for example. It happens in Peru most frequently that silver is found associated with copper and lead, therefore the larger part of it leaves the country in the form of copper bars and mattes and lead bars and lixiviation sulphides.

Silver ranks next in importance to copper and constitutes about one-fourth of the Peruvian mineral production. It owes its position almost entirely to the fact that the Peruvian copper ores are argentiferous and the great output of copper has resulted in a larger silver production. About 81 per cent of the silver of the country comes from two Departments, and from practically the same mines as does the copper.

The Departments of Ancachs, adjacent to Junin on the north, contributes one-tenth of Peru's silver output, chiefly from argentiferous lead ores. This Department has a great number of comparatively small producers, both native and foreign.

The exports of silver to the United States in



1915 in various forms were valued at \$724,263.

Although the gold output of Peru has considerably increased in recent years and is valued at nearly \$1,000,000 a year, when analyzed the figures show that the gold mining industry as such is of little importance. Less than 40 per cent of the gold production comes from precious metal deposits, gold lodes, and placers. The remainder comes as a by-product from the mining of other ores, chiefly copper, as in the case of silver. In fact, all the copper bars exported from the country are taxable according to the percentage of gold and silver they contain. The Department of Junin takes first rank, with 60 per cent of the gold output. One-half of the entire gold production comes from the copper ores of the Cerro de Pasco mines. Several of the other Andean Departments maintain a small production from gold ores and gold placers. The most important gold mines in recent years are the Chuquitambo near Cerro de Pasco; Cochasayguas in the Department of Apurimac; and the Santo Domingo of the Inca Mining Co., the mines being situated on the eastern slope of the Andes in the Department of Puno. Most of the mines are equipped with modern gold-milling machinery. By the recent law of November, 1915, an export tax of £10 (\$48.66) a kilogram is placed on gold.

#### DEMAND FOR RARE MINERALS

Considerable interest was manifested here throughout the year 1915 in locating and developing properties containing rare minerals, such as tungsten, vanadium, molybdenum, bismuth, and antimony.

The European war has, of course, been responsible for this. The prevailing prices are the highest reached in many years and practically all owners of rare minerals have been working their mines to the fullest extent.

Prior to 1910 no tungsten was exported from Peru. In that year 12 tons were shipped. The demand has rapidly grown until at present there are shipments of about 345 tons a year, mostly to the United States and England. During the first three months of 1916, 70 tons of concentrates, running from 58 per cent to 56 per cent  $WO_3$ , were exported from the consular district of Salaverry, and it is not improbable, should the demand continue and high prices prevail, that this quantity will be increased. A company in Lima has at present a contract for the delivery of about 30 tons per month.

Tungsten was first discovered here associated with gold in a mine in Lircay, Ayacucho, and later on in considerable quantities in the mountain region of Pelagatos, in the Province of Santiago de Chuco, where there exist today three or four valuable mines. The mineral found in Lircay is tungstate of iron and manganese and that found in the north is principally hubnerite (tungstate of manganese). The rapid increase in the utilization of this mineral in the manufacture of war material and tools has given it an enormous value at the present time. The production for 1916, should the war continue, will probably be at least 50 per cent higher than for the preceding year. The French Govern-

ment is at present manifesting interest in these mines. Recently Col. Dogny, of the French Army, visited the tungsten-producing regions of Peru in the interest of the factories of Crusot, belonging to Schneider & Co., France. In December of 1915, there were rumors to the effect that large deposits of tungsten were discovered in the Puno region, and samples submitted to the engineers at Lima proved it to be wolframite of very pure quality. Nearly all the tungsten exported at the present time is shipped to the United States.

The three principal mines are owned by Peruvians who have at present a contract for a few months with a German house of Lima, which firm ships this ore largely to a banking firm of New York.

#### RICH MOLYBDENUM PROPERTIES

It seems that Peru is the only country in the world where vanadium has been found as the principal element of a deposit. The mines at Minasragara, the largest in the country, are the property of the American Vanadium Co. The exports of the mineral for the last five years were as follows: Year 1911, 2,251 tons; 1912, 3,048 tons; 1913 and 1914, exports suspended; 1915, 2,526 tons to the United States. The production is, of course, controlled by the vanadium company, which regulates its output according to its demands. Larger quantities, it is stated, could easily be produced.

There exists a vast zone in the Department of Junin where numerous veins of asphaltite are to be found, which are analogous to the grahamite, gilsonite, and albertite found in the United States, with the peculiarity that nearly all contain vanadium, some having as much as 30 per cent of vanadic acid in their ashes.

For several years it has been known that rich molybdenum properties had been discovered in Peru, but owing to the difficulty and cost of concentrating this mineral by oil, and the inaccessibility of the mines, most of them being situated at an elevation of 14,000 feet, they were not worked until the heavy demand and higher prices were created by the European war. The principal group of mines is found in the region of Ricran and Runtaullo in the Provinces of Jauja and Huancayo, and there are some in the district of Cascas in the Province of Contumaza. It may be safely calculated that no more than 4 tons of this mineral, with 83 per cent of molybdenite, were exported during 1915. It brought as high a price as £700 per ton.

It is the belief here that by the proper exploitation of the granite rocks in certain zones important deposits of molybdenum will be found. The export duty on this mineral, under the new law, is \$4.86 per ton, but it is not improbable that when the industry develops the duty will be materially increased.

#### ANTIMONY MINES ACTIVE

Bismuth is exported in the form of concentrates with 20 per cent contents of the metal. The San Gregario mine in the Cerro de Pasco zone is probably the principal producer, but its production is limited by the fact that it forms

part of the European bismuth trust composed of the refineries of Johnson Mathey & Co., London; the royal foundries at Freiberg and Oberstein in Saxony, and the Deutsche Gold & Silberscheide Anstalt at Frankfurt. It is claimed this mine furnishes about one-twelfth of the world's bismuth supply and could furnish the whole.

The production of bismuth during the last four years was as follows: Year 1911, 24 tons; 1912, 51 tons; 1913, 25 tons; 1914, 81 tons. Official statistics of the exports during the year 1915 are not yet available.

Antimony ores are worked only when the price of the metal reaches exceptionally favorable quotations. From statistics and other data it would appear that, with the exception of a shipment to the United States of 7 tons in 1915, no antimony has been exported from Peru since 1910, when 49 tons were shipped. At present, owing to the high price of these ores, a period of great activity in the working of the mines has set in, especially in the deposits along the railway line to Cuzco. According to information these deposits are very abundant. A curious fact that should be noted is that nearly all the stibnite exported has been shipped to Japan.

#### NEW MINING LAW

Probably the most far-reaching measure affecting the mining industry of Peru during recent years was the new mining law (copy on file in the Bureau of Foreign and Domestic Commerce), whereby an export tax was placed on nearly all minerals shipped from the country. This law went into effect on November 14, 1915. The revenue it provides will be derived largely from the important copper-producing mines of the country, which are owned principally by American citizens, and control probably 80 per cent of the copper output. The tax on copper is based on a graduated scale. That is, when the price of standard copper in London is from £60 to £65 (\$292 to \$316) per ton the export tax will be 15s. (\$3.65) per ton of 1,016 kilos (2,240 pounds). Above £65 (\$316) the tax will be 2s. (49 cents) additional for every pound sterling increase in price. Not only does this measure seriously affect the exports of copper, but the gold and silver contained in the copper bars exported is also taxable.

Fine gold is taxed at £10 (\$48.66) per kilo (2.2 pounds). The gold contained in copper and other metals pays a tax of £2 (\$9.73) per kilo.

Silver is subject to a tax of 1s. a kilo when the price in London is quoted at 23½d. (47 cents) a troy ounce; above this price, 2¼d. (5 cents) more for each penny increase.

Borates pay an export duty of 2s. (49 cents) per ton.

Petroleum pays a contribution of only 1s. a metric ton. These taxes are required to be paid in drafts on New York or London at ninety days sight. When the tax amounts to less than £40 (\$194.66) it may be paid in English gold. The Chamber of Commerce of Lima fixes weekly the value per ton of standard copper and of the troy ounce of silver, being guided by the price quoted by the London Metal Exchange.

In addition to this export law, another measure was passed by Congress which places customs duties on all imports of mining machinery, which heretofore was free of duty. The effect of these measures will undoubtedly be unfavorable to future investments of American capital in the mining industries in Peru.

At the present time (June, 1916) the producers of copper are paying the Government on an average of about £7 (\$34) per ton for every ton of standard copper exported from the country.

As a result of these laws the amount of taxes which the Cerro de Pasco Mining Company alone will pay to the Peruvian Government during the year 1916, including the export tax on copper and the gold and silver contained in copper bars, and the import tax on their mining machinery and other materials, will be about \$1,000,000. It is however, early to gauge what effect the export duty on copper will have upon the industry. So long as the price of copper keeps up the miner can afford to pay his quota.

#### BETTER COOPERATION IS

##### URGED BY MR. SCHOLZ

"There can be no greater need for proper cooperation than in such matters as those which came to a focus in the recent railway legislation. On the one side we had an example of a democracy which had gone over to socialism. On the other side, we had a union which had construed cooperation to mean monopoly. In between, there was a breakdown of everything which makes for the dignity and the sacredness of our Government. From this warping of things which in themselves are good, we must be redeemed. The only way out is a newer and better meaning of cooperation." (Extract from address of Carl Scholz at the Mining Congress Convention.)

#### WORK ON MAJOR METALS

##### MAY BE BEGUN IN COLORADO

To meet a demand for metallurgical work on the major metals, the Bureau of Mines is considering an expansion of its cooperative agreement with the Colorado School of Mines, which will allow the undertaking of this work. Director Manning of the Bureau of Mines is making every effort to proportion the funds at his command so as to permit of this additional work. Since it will necessitate the utilization of the services of a high salaried metallurgist and the use of considerable expensive equipment, the question of ways and means presents a difficulty not easily surmounted.

#### FARMER GETS MORE AID

##### THAN DOES THE MINING MAN

"An interesting comparison shows that the Federal Government in the present year has donated to the farmers one dollar for every \$295 worth of products of the farm. It has donated to mining one dollar for every \$1,017 worth of products from the mines." (Extract from address of Van H. Manning at Mining Congress Convention.)



## Traffic

Proposed increases of rates on bituminous and cannel coal in carloads from certain points in Pennsylvania to destinations in New York, New England, and in the province of Quebec, have met the approval of the Interstate Commerce Commission. The case is known as I. & S. No. 800. The opinion of the Commission was written by Commissioner McChord. The case is summed up by the commission as follows: "Increased rates on bituminous and cannel coal in carloads from group 2 points in the Freeport district of Pennsylvania on the line of the Bessemer & Lake Erie Railroad Company to destinations in eastern New York, New England, and the province of Quebec, Canada, found to be properly aligned with rates on similar coal from neighboring mines on other lines of railroad to the same destinations. Complaint dismissed and orders of suspension vacated."

In the case of the Alliance Coal & Coke Co. *vs.* the Colorado & Southern Railway Co., the Commission held:

"Rates on nut coal from the Walsenburg district in Colorado to points on the Atchison, Topeka & Santa Fe Railway in Kansas found to be unjustly discriminatory to the extent they exceed by more than 10 cents per ton the rates contemporaneously maintained from the Canon City, Colo., district to the same destinations. Proper relationship prescribed."

An effort to secure a lower minimum weight on coke from Chicago to Tonopah has failed. The Interstate Commerce Commission in a ruling in the case of the Berry Coal & Coke Co. versus the Tonopah & Goldfield Railroad Co. has not found the rate unreasonable or unduly prejudicial.

In the case of the Low Moor Iron Company of Virginia *vs.* the Chesapeake & Ohio Railway Company et al, the Commission ruled:

"Upon petition of the Norfolk & Western Railway Company and the Chesapeake & Ohio Railway Company, divisions of joint rates on pig iron in carloads from certain Virginia furnaces to Baltimore, Philadelphia, New York, and Boston, and other points prescribed."

### Opens Washington Office

The military committee of the National Research Council has taken offices in Washington and will have a meeting on the first Tuesday of each month.

### Completes Field Work

H. G. Ferguson has completed the field work of a geological study of the Mogollon & Steeple Rock districts of New Mexico.

## CHEAP COAL OF OTHER YEARS A CAUSE OF HIGH PRICE NOW

*Saturday Evening Post.*

Here is an anthracite coal mine. The operator can take out 40 per cent of the coal at a minimum cost a ton—as he used to do twenty-odd years ago. With improved methods, which involve more expensive equipment and a greater mine cost, he can take out 65 per cent of the coal, as at present. The supply of anthracite being strictly limited, so far as known, it is good long-run economy to recover 65 per cent and pay somewhat more a ton.

For many years we got cheap lumber by ruthless slaughter of forests, taking the timber that was easiest to reach and wasting much of the rest. On a long view we could have afforded to pay more for lumber then and conserve the timber supply. Cheap coal was wastefully burned; cheap lumber wastefully used. Many instances might be shown where cheapness that involves waste is not good economy.

Especially where it involves waste of human material. Cheap clothes and sweated labor, cheap articles made by overworked children, are not a good investment. Cheap food and discouraged farm boys do not spell long-run prosperity.

High prices that inspired better methods of distribution might well be a gain. In this matter of coal it has been declared that distribution to consumers in cities costs 50 cents a ton more than it should; which—according to a recent statement by members of the Geological Survey—is more than half of the total return on a ton to all the capital invested in the coal industry, including coal lands, mining machinery, railroads and coal yards.

If these high prices brought about a thorough study of our methods and habits of production, distribution and consumption they would be profitable in the long run.

## CHEMICAL COMPOUNDS FOUND NOT TO AID COMBUSTION

Fraud orders may be issued by the Postoffice Department against certain chemical compounds claimed to aid combustion as a result of an examination of these mixtures by the Bureau of Mines. Laboratory tests were made and in addition the mixtures were tried in furnaces and stoves. An analysis of the mixtures in the laboratory developed the fact that they contained no ingredients which possessed any quality that would aid combustion or would have an appreciable effect upon the burning of coal. The claim that these mixtures would save fuel was declared to be absolutely unfounded. The analysis of one of the mixtures as made by the Bureau of Mines, is as follows: NaCl, 79.28; KClO<sub>3</sub>, 16.34; KMnO<sub>4</sub>, .20; Na<sub>2</sub>SO<sub>4</sub>, .78; Na<sub>2</sub>CO<sub>3</sub>, 1.15; Insoluble earthy matter, 1.57; moisture, .33.

## HISTORY OF MINING IN ARIZONA COUNTY AN INTERESTING TALE

Tucson, Ariz., Jan. 18.—Historically, probably the most interesting of all of the mining activities within the State of Arizona are those of Santa Cruz County, inasmuch as it was within this area that the Jesuit fathers founded a chain of missions in the Valley of the Santa Cruz River and farther south into Mexico. According to "La Historia del Nayarit," an account of the "labors of the Society of Jesus in Sempiternal America," which work was written by Fra Ortega, one of that order, Father Eusebia Kino, whose name has been immortalized by his great work, came from the City of Mexico in 1686, and locating, in 1678, a mission at a point about thirty miles south of the present international boundary between the United States and Mexico, he names the mission and the river beside whose banks it stood, one the Mission Dolores and the other Rio Dolores. From that point as a base of operations the devoted missionary established missions at Cocospera, Remedios and Santa Barbara.

In the Santa Cruz Valley, below the Santa Barbara Mission, Fra Kino built four other missions, the first at San Felipe Guevavi, about nine miles northeast of Nogales; another at San Cayetano del Tumacacori, about nineteen miles northwest from the same town; a third at Santiago, the site of which point is not known accurately now, and the fourth at San Xavier del Bac, nine miles south of Tucson. San Xavier has been restored by the Federal Government and is one of the show places of Arizona.

In the vicinity of each mission was a presidio, or military post, with a garrison sufficiently strong for protection of the surrounding region from the marauding Apaches, who occupied regions beyond the San Pedro and the Gila, whence they were wont to make excursions of rapine and ravage into the country of the Pimas and the Papagoes, peaceable Indians occupying these regions, who readily embraced Christianity, coming easily under the domination of the gentle priests. These Indians were tillers of the soil and laborers. From among them were drawn the workers in the mines and on the ranches that the friars and laymen among the Spaniards discovered and exploited. Tubac, on the Santa Cruz, twenty-two miles from Nogales, was the presidio near Tumacacori, and recently there have been unearthed a lot of old rusty 12-pound cannon balls that were no doubt for use in some of the artillery of the garrison. Tucson, which had been the site of an Indian village, was the presidio for protection of the country surrounding.

According to the history of that time, and the records of the mission now preserved in Spain, the friars at Tumacacori discovered and wrought rich silver mines in the Santa Rita Mountains, to the northeast, and in the Atacosa Mountains, on the southwest. The

Salero mines and other properties in the Santa Ritas are known to have been operated by the friars, and in places vestiges of their workings are found today. In recent years a party from California having a plat or map with a written description of the location, said to have come from the archives of the old mission, has been searching in the Atacosa Mountains for an abandoned mine that the record which they have tells of having been exploited by the friars. Those operations are established to have been inaugurated very shortly after completion of the mission church and cloister at Tumacacori, in 1688. So there is presented the record of the first mining done on the Pacific Slope of the United States.

The whole story of mining in Santa Cruz County is told in Bulletin 29 of the Arizona State Bureau of Mines, entitled "The Resources of Santa Cruz County," by Allen T. Bird. Copies may be obtained by writing Charles F. Willis, Director, Arizona State Bureau of Mines, Tucson, Arizona.

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## RADIUM WORK IN COLORADO ENDED—PLANT IS SOLD

Having completed its experimental work on radium in Colorado, the Bureau of Mines and the National Radium Institute have turned over their plant and radium equipment in Denver to the Pittsburgh Radium Company which recently purchased it. For three years the Bureau has been cooperating with the National Radium Institute and a very successful series of experiments has resulted. As was stated specifically at the beginning of the work, agreement was to be for experimentation covering a limited time.

The total production while not yet exactly known during the three years' work was over eight grams of radium metal. This output has been turned over to the Howard A. Kelly Hospital, in Baltimore, and the General Memorial Hospital of New York. Despite frequent statements to the contrary, the managements of these hospitals are enthusiastic over the results they have obtained in the use of radium in the treatment of cancer.

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## EXPORT TRADE MAY BE WON BY KEEPING ON THE JOB

"The markets of the world are not to be taken by conquest. They must be won and held by the administration of the same business principles on which our domestic trade is founded—superior goods, superior service, uniform fair dealing, unfailing reliability and that faculty of being eternally on the job that is the truest characteristic of American business today." (Extract from address of C. L. Dering at the Mining Congress Convention.)



## SHORT COURSES FOR MINERS ARE OFFERED IN ARIZONA

Short courses for miners have been undertaken by the University of Arizona.

The object of these courses is to give the working men of the State of Arizona an opportunity to attend the university for a short period in order to get in concentrated form information and training which will enable them to better their own positions, and which will result in more complete and economical utilization of the country's mineral resources, it is stated in the announcement.

Tuition is free to residents of Arizona. Others are charged a tuition fee of \$1.00 per course.

The ability to read and write and to work ordinary problems in arithmetic, together with seriousness of purpose, are the only requirements for entrance to these courses. The faculty reserves the right, however, to exclude any whom they believe are insufficiently qualified to benefit by pursuing the courses offered. No course will be given for less than three students.

The courses are as follows:

### PROSPECTORS' COURSE

This course covers the elements of blowpipe analysis, mineralogy, petrology (rock study), geology and surveying. The student is taught how to identify all the commoner or more important elements by the use of a blowpipe, and how to recognize the principal ore and gangue minerals and rocks at sight. In geology only those portions of the subject directly applicable to mining or prospecting are presented; while in surveying, the work covers the use of instruments, mapping, computing connections, etc. Incidental fee, \$5.00.

### FIELD GEOLOGY COURSE

This course gives practice in the application of geological theory in the field and in the solution of the geological problems arising in mining operations. Some training is given in the construction of geological maps and sections, and several mineralized areas in the neighborhood of Tucson are carefully studied. Students desirous of taking this course should correspond with the university before coming to Tucson, as it may prove impossible to give this course in 1916. Incidental fee, \$1.00.

### ASSAYING COURSE

This course includes the theory and practice of assaying for gold, silver and copper. Among the topics presented are the use of apparatus, reagents, methods of sampling and the assay of solutions and bullion. Fire assaying for lead is also briefly presented. The work is carried on largely in the laboratory, and is intended to teach the routine work of mine assay offices rather than to enable the student to solve the varied problems that are constantly encountered by a public assayer. Incidental fee, \$1.00.

### METALLURGISTS' COURSE

This course deals with concentration and amalgamation, and includes practice work in mill and laboratory, as well as theoretical instruction. Among the subjects presented are the following:

Concentration, hand dressing, crushing, stamping, screening, classification, sand and slime concentration and magnetic separation.

The chemistry of the cyanide process, testing for cyanide treatment, precipitation of cyanide solutions, cleaning up and refining bullion.

Amalgamation, testing for amalgamation, cleaning up and retorting.

## BUREAU OF MINES ESTABLISHES STATION AT NORTON, VIRGINIA

In order to serve the important mining region of which Norton, Va., is the center, the Bureau of Mines has decided to establish a mine rescue and first aid station at that point. D. J. Parker, the mine safety engineer of the Bureau of Mines, and E. B. Sutton, the Bureau's engineer having charge of the southeastern district, have visited Norton and have arranged for cooperation with the operators.

## CAR SHORTAGE RETARDS COAL SHIPMENTS FROM VIRGINIA

Mining of bituminous coal continues on a favorable basis, but shipments are being retarded by continued car shortage, says the report to the Federal Reserve Board from its bank in Richmond. The manufacture of fire brick in some of the coal regions is on an unusually good basis. Port shipments of coal continue to show a decrease. Prices are firm, with a scarcity of freight room and a continuance of high rates.

## POLISHING OF MINERAL SPECIMENS FAIRLY SIMPLE

The polishing of rocks and mineral specimens for ordinary purposes is fairly simple. It is only necessary to grind a flat face with coarse carborundum or emery, gradually remove all irregularities and scratches with finer carborundum, and finally polish on any revolving disk covered with leather, broadcloth, felt, beaver cloth, or other cloth, kept wet and dusted with polishing powder. Tin oxide (putty powder), chromic oxide, aluminum oxide, and iron oxide (rouge) are the most suitable polishing powders. Instead of using a revolving disk the polishing can be done by hand on any flat surface.

For methods of obtaining the high polish required for examining opaque minerals with the reflection microscope complete information is given in "The Microscopic Examination of Opaque Minerals," by Joseph Murdoch, recently published by John Wiley and Sons.

## Personals

Charles W. Henderson, who is in charge of the Denver office of the Mineral Resources Division of the Geological Survey, is in Washington conferring with H. D. McCaskey, the chief of the Mineral Resources Division.

John Huff, of the Bureau of Mines, has been assigned to the Seattle Experiment Station, where he will have charge of an important division of the clerical work.

Fred T. Roseberry, of Sycamore, Cal., has advised friends in Washington that he will soon leave for Guatemala to take charge of an extensive placer mining operation.

Dr. Henry Mace Payne was in Washington recently on business with the United States Geological Survey. Dr. Payne came through in his car from New York en route to Waynesboro, Pa., on a business trip. While in Washington, he took occasion to call at the headquarters of the Mining Congress.

William Griffith, the well-known mining engineer of Scranton, Pa., spent several days in Washington recently.

John P. Reese has been elected vice-president and general manager of the Consolidated Coal Mining Company, with headquarters at Gillespie, Ill.

Prof. Arthur K. Adams has gone to Chile in the interest of the Andes Copper Mining Co. Professor Adams expects to be in South America for a considerable time.

H. G. James, president of the Western Petroleum Refiners' Association, with Mrs. James, has left on an extended trip to Honolulu.

James F. Callbreath has returned to the Washington office after a trip to Denver where he attended the Colorado Metal Miners' Association meeting. En route, he stopped at Chicago where he looked after the printing of the proceedings of the recent convention held in Chicago.

George Otis Smith, Director of the United States Geological Survey, read a paper on "Geology and Public Service" before the Geological Society of Washington, January 10.

Charles T. Lupton, formerly with the Geological Survey, but who is now connected with the Cosden Oil & Gas Co., has been working at the Geological Survey during the past month completing some of his reports.

Harry L. Day, of Wallace, Idaho, has been spending a few days in the East. Mr. Day is a director of the American Mining Congress, and

while in Washington discussed with Secretary Callbreath the work of the organization.

Clarence G. Smith of the Bureau of Mines has in preparation a bulletin on "Petroleum Accounting Methods."

Van H. Manning, Director of the Bureau of Mines, was ill during a portion of last month with an attack of lagrippe.

John Cochrane, head of the publications division of the Bureau of Mines, was in Pittsburgh several days last month to arrange plans for the dedication of the Bureau of Mines building there.

### GEOLOGICAL STUDY OF OATMAN DISTRICT TO BEGIN NEXT FALL

Until topographical maps can be completed, it will be impossible to make a geological study of the Oatman mining district of New Mexico. It had been hoped to have these maps ready so the geological work could be done this winter. Unexpected difficulties in the detailed work on the maps have come up, however, and it will be necessary to work until next fall for the geological study. Adolph Knopf, the geologist who had been designated to do the Oatman work, has been assigned to a similar study of the Rochester district of Nevada.

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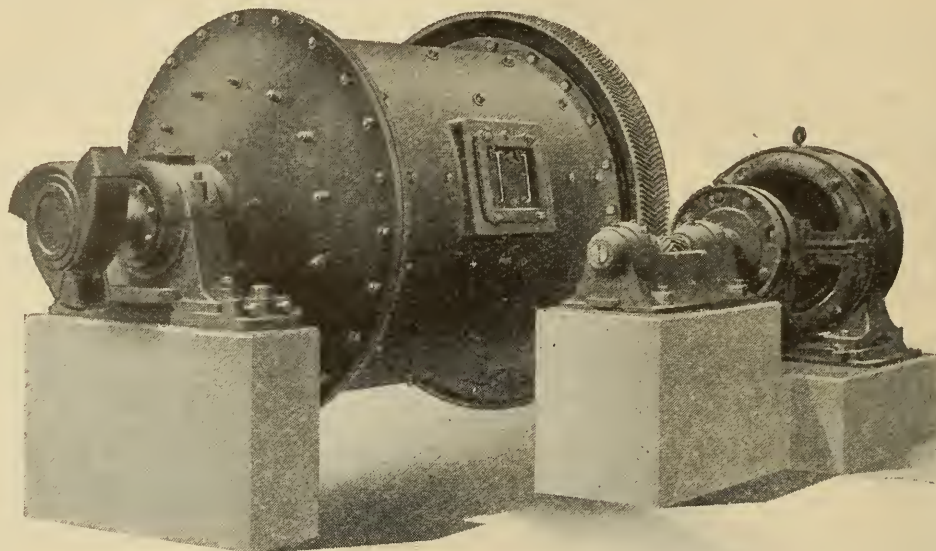
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# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## AMENDMENTS PROPOSED TO COLORADO INDUSTRIAL DIS- PUTES INVESTIGATION ACT

The valid criticisms which have been made against the present Industrial Disputes Act in Colorado were directed to the fact that the present law places no limit upon the time during which the commission is required to make a report of its investigation of a threatened strike or lockout, thus leaving it in the power of the commission, by delaying its report, to continue in effect the prohibition against a change in working conditions.

Amendments have been favorably reported by the joint Industrial Relations Committee of the Colorado Legislature under which the commission is required to make a report within thirty days from the service of the original notice, except where the conditions are such that a determination cannot in justice be made within that period, under which condition the report is required to be made within ninety days from the date of the original service, except where the parties to the dispute consent to a longer period.

The amendment proposed substitutes the following sections for Sections 29 and 30 of the present law:

[NOTE.—The present sections of this law will be found upon another page of this issue.]

Section 29. Employers and employes shall give at least thirty days notice to the party affected, and to the Commission, of any intended change affecting any and all conditions of employment.

Within ten days from the service of any such notice, the party or parties upon whom the notice is served shall file with the Commission their answer thereto, whereupon the Commission shall proceed to set a time for an investigation, hearing or arbitration upon the matters involved,

at some convenient place, which time shall be not less than five days nor more than ten days from the date of filing such answer, and shall cause due notice to be given to the parties filing such notice, of the time and place of hearing.

Such investigation, hearing or arbitration shall be conducted speedily, and the determination or findings in such cases shall be made and published within ten days from the conclusion of such investigation, hearing or arbitration, and within thirty days from the service of the original notice therein, except that in cases where the investigation, hearing or arbitration cannot, with justice, be concluded and the award made within the said period of thirty days, the time therefor may be extended by consent of the parties, or by formal order of the Commission, entered upon its records and setting forth the reasons therefor; provided, however, that no such extension shall operate to delay the final award or determination for more than ninety days from the service of the original notice in said matter, except where the parties themselves consent to a longer period of time.

Section 30. It shall be unlawful for any employer to declare or cause a lockout, or for any employe to go on a strike, on account of any dispute, prior to or, during an investigation, hearing, or arbitration of such dispute by the Commission, or board, under the provisions of this act, or without notice as provided in this act.

In every case where a dispute has been made the subject of an investigation, hearing or arbitration by the Commission, neither of the parties, nor the employes affected, shall alter the conditions of employment, or, on account of the dispute, do or be concerned in doing, directly or indirectly, anything in the nature of a lockout or strike, or a suspension or discontinuance of work or employment; but the relationship of employer and employe shall continue unchanged and uninterrupted by the dispute, until the final determination thereof by the Commission; but neither employer nor employe shall use this or any other provision of this act for the purpose of unjustly maintaining a given condition of affairs through delay, or engage in any unfair practice, during the hearing and determination of such dispute by the Commission; provided, that nothing in this act shall prohibit the suspension or discontinuance of any industry or of the working of any persons therein for any



cause not constituting a lockout or strike, or prevent any employe from quitting his employment and terminating the relation of employer and employe, or any employer from discharging an employe for causes other than those arising on account of such dispute; provided, further, that nothing in this act shall be held to restrain any employer from declaring a lockout, or any employe from going on a strike in respect to any dispute after the same has been duly investigated, heard, or arbitrated, and finally determined under the provisions of this act.

The objection of the labor leaders to the law is based upon the pretense that this law is an interference with the right of individual liberty. The proposed amendment meets this criticism by giving absolute liberty to suspend or discontinue "any industry or of the working of any persons therein for any causes *not constituting a lockout or strike.*"

It is hoped that the amendments proposed will be enacted. These amendments seem to meet every criticism which any person can reasonably suggest to the provisions of the law. Only those who are of the opinion that might makes right can object to the investigation of a controversy before such steps are taken as mean loss to all parties involved and loss to the people as a whole. It is time that the activities of large bodies of men which seriously affect the interests of the public shall be brought under public control. While the right of an individual to loiter upon the street may be a personal right, the right of a thousand men to impede traffic and destroy the purpose to which the street is dedicated is a violation of the rights of the public as a whole. In the words of Governor Carlson's retiring message to the legislature of Colorado:

"It is inconceivable how investigations where the status of both parties is preserved can be harmful to either. It would be a terrible thing to annul the work along these lines already started and to prevent the extension of such activities in the future. I urge, therefore, that there be no abridgment of the commission's powers, and that its appropriation be increased in amount as much as the revenues and other demands will permit."

#### MAY BE ISSUE SOON

In view of the developments in the negotiations in progress between the

Federal Trade Commission and the paper manufacturers it would appear that the possibility of Government regulation of coal-mining operations may be an issue sooner than most persons expect. When George Otis Smith, the director of the Geological Survey, suggested this possibility at the convention of the American Mining Congress at Chicago last November, there were many who took the position that such a condition was absolutely hypothetical and was so unlikely to arise in actuality as to make it unnecessary to consider it at this time.

Those who have not read Dr. Smith's paper, of which C. E. Lesher is the co-author, should secure a copy of the Proceedings of the American Mining Congress and go over this paper carefully. Dr. Smith is in a position to know more than the average mine operator as to the trend of public thought in such matters. It would be well to have in mind his conclusions in this regard.

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#### A GREAT STEP TOWARD INDUSTRIAL PEACE

A very cheering report comes from Colorado to the effect that the Denver Trades and Labor Assembly at a recent meeting adopted a program of "conciliation rather than force" in the settlement of any grievances that may arise in the future. The report states that this action is regarded by the union advocates as the greatest step taken in the interest of the general welfare of Colorado in a decade.

It would seem that the Colorado Industrial Commission Law making illegal a strike or lock-out pending an investigation by the Commission will have a very beneficial effect.

After years of industrial dissension Colorado has had but three minor strikes in two years time, and these settled in a few days' time under the direction and by the recommendation of the Industrial Commission. Instead of the bitterness which was almost general two years ago the Trades Assembly now urges conciliation instead of force. We believe the Industrial Commission had much to do

with producing these conditions and this incident gives endorsement to the following statement of Commissioner Williams:

"I believe profoundly that this law will work to the advantage of labor and capital, and that it will bring a larger measure of industrial peace than our State or any other state has hitherto enjoyed.

"It may not solve the whole problem of industrial disputes or eliminate all strikes, but it will tend to solve the problem, it will lessen the number of strikes and it is at the very least a step in the right direction."

By all means let us have industrial peace. Where disputes do arise let them be adjusted in a civilized manner, by conciliation if possible, by mediation, and if necessary by arbitration.

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### COOPERATION THE KEY NOTE

Criticism has been made of the editorial attitude of THE MINING CONGRESS JOURNAL upon the ground that the American Mining Congress has presumed to be independent in its principles and to have earnestly sought the welfare of the wage earner as well as the operator and that the recent editorials in THE MINING CONGRESS JOURNAL seem to speak only for the operator and to criticize unduly the attitude of those labor leaders who have stood against the enactment of laws looking toward the arbitration of industrial disputes.

Notwithstanding the danger of this situation, THE MINING CONGRESS JOURNAL hopes to occupy this position and in the end, to receive the approval of both sides of industrial controversies. It is inevitable that there shall be industrial disputes. So long as human agencies control, advantages will be sought by each side not fair to the other side nor beneficial to the public at large.

The most notable success known to the writer in occupying this position of absolute fairness between the contending sides of an inevitable controversy was the late Dr. Joseph A. Holmes. His success in maintaining the friendship of both operator and miner, as he lead the way toward better things for both, required a combination of diplomacy, sagacity and tender sympathy, which is seldom found in any one individual.

THE MINING CONGRESS JOURNAL emulates his example and will, so far as it has power, undertake to demonstrate that the best interests of each will, in the end, be served by that which is best for all and that the highest success of the operator and the best welfare of the miner can be best served through a complete cooperation through which proper compensation shall be paid for service, proper and fair profit shall remain to the operator and the public shall receive its product at a price which it can afford to pay. In undertaking to maintain this position the journal will make mistakes but this inherent purpose will be found in whatever it may endeavor to present to its readers.

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### COMPULSORY INVESTIGATION OF INDUSTRIAL DISPUTES

The difference between civilization and barbarism is based upon the difference in methods by which disputes between the various members of society are settled. In conditions of barbarism, each man undertakes to be a law unto himself and to redress his own wrongs, a condition which means that might makes right. In other words, brute force is the final arbiter. The higher condition of civilization is that in which all disputes are necessarily left to some judicial body for determination. The citizen who undertakes to settle his grievance by open assault is counted a disturber of the public peace and is punished as such without reference to the merit of the controversy involved. The world today yearns for some condition in which disputes between nations may be settled by some just form of arbitration. Private disputes within civilized governments can receive their redress nowhere else but in the courts. Why then should it not be possible to settle industrial disputes by some other method than by strikes and lockouts, which are disastrous, not only to those involved in the controversy but to the public at large.

THE MINING CONGRESS JOURNAL believes without question that might does not make right, that those controversies which are settled as the result of force



only have never yet been permanently settled and that there is no reason why industrial disputes cannot be better settled by arbitration than by industrial war. Such arbitration must comprise a complete knowledge of the facts involved, a complete knowledge of industrial conditions. It must at all times have due regard and first regard for that right which is inherent to all American citizens, the right of individual liberty, a liberty not measured by membership or non-membership in any organization, a liberty not measured by bank balances, by the ownership of property, or by the lack of property interests.

THE MINING CONGRESS JOURNAL believes in the right of the laboring man to strike, but it does not believe that a prohibition of a general strike pending an investigation of the issues involved—is a violation of the right of liberty of any individual. The Sherman law was designed to prevent combined action through which the public may be injured. The individual wage earner has a right at all times to refuse to work, but when he undertakes by concerted action to force his employer, the right of the public should be given consideration. To restrain concerted action, is not a violation of any individual right. To restrain such action for the benefit of the public would surely seem to be within the province of any orderly government.

A comparison of conditions in the State of Colorado for ten or twenty years prior to the adoption of the Colorado Industrial Commission Law with the two years in which this law has been effective will convince any fair-minded man, wage earner or employer, that both sides have been mutually benefited by the operation of that law and any organization which openly advocates its repeal or stands in the way of enactment of similar laws elsewhere must rest under suspicion of being controlled by selfish interests.

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### THE FAILURE OF THE LEASING SYSTEM

To urge that the enactment of the leasing bills will open up the West to development is not convincing in the face

of the experience under the Alaskan Coal leasing bill.

This bill was signed by the President in August, 1914. Up to this time not a single operating lease has been granted under its provisions.

Alaska has needed coal all the time since 1886, as badly as our eastern cities have needed it, when a coal famine is threatened. For more than thirty years the United States Government has been trying to open up Alaskan coal. The coal resources of Alaska are unlimited. The need for its use has been pressing all of these years. The desire of the Government, most of that time, has been earnest, but the results are ludicrous and pitiful. It is said that fools learn only by experience. The Government don't appear to learn even by experience. The system which has kept Alaska from development is offered to the western States as a means of development. It has not worked in Alaska and it will do no better elsewhere.

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### UP TO THE ADMINISTRATION

The gold mining industry of the West is almost paralyzed because of the enormously high cost of cyanide.

The production of cyanide requires cheap power. The shortage is caused, first, by the extraordinary demand created by war conditions and second, by the embargo put upon the transmission of hydro-electric power across the border at Niagara by the Canadian Government.

Congress has rushed through a bill providing for a larger use of the water of the Niagara on the American side in order to partly make up the deficiency. Another arm of the same government is prosecuting citizens who have spent millions of dollars in the development of western water powers with the purpose of taking from them the rights-of-way upon which rests the security of the investments, and by this course has put an end to all similar enterprises. We are making vast appropriations for preparedness. Private enterprise, if it had not been interfered with, would have developed water-power plants in the West, which in the event of war would be the

most effective in meeting the demand. Why not now recognize the contract between the Federal Government and the several States and permit industrial preparedness by private capital, always available to the nation in time of war? The use of the waters of the arid West both by contract with the Federal Government (the Enabling Acts and the State Constitutions) and by prime necessity which is the highest law, belong to the individual States. Recognize that contract and there will be an industrial preparedness without which the tax payers of the nation will be called on to meet unnecessary and burdensome obligations.

Mr. Secretary Lane, the way to meet the situation is to cancel the water-power site withdrawal orders and to recommend to the Department of Justice the withdrawal of the litigation in which the Government is fighting to retain control of the water powers of the West.

The way to resume, Mr. Secretary, is to resume. It's not up to Congress. It's up to the Administration.

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## THE WAY TO RESUME

### IS TO RESUME

Secretary of the Interior Lane's letter to Senator Myers under date of February 10, urging action on the land leasing bills in order that western resources may be opened up to development, as a means of preparedness, calls attention to the fact that 6,000,000 acres of oil lands are locked up, that 3,000,000 acres of phosphate lands are locked up and that the largest deposit of potash in the country is locked up.

The Army and the Navy and the automobile users of the country need the oil. The Army and the Navy may need, and the consuming public does need the farm produce which the phosphate deposits might produce and the Army and the Navy may need the potash fundamental in the manufacture of explosives. In the face of the possibly increased demands of the future we shall have ample need for the results of unrestricted industrial activity. To meet these needs we shall not look to the oil wells operated

by the Government, but we shall look to those plants which have been developed by private enterprise.

While all will agree as to the importance of western development, but few who understand will approve the plan proposed. General Grant once said with reference to the resumption of specie payment "The way to resume is to resume." The way to open up western resources to development is to open them up.

If Secretary Lane wants the phosphate deposits of Montana to be opened up, let him recommend to the President that the withdrawal order as it relates to these deposits be cancelled. Without cheap sulphuric acid these deposits will be forever worthless.

Today thousands of tons of sulphuric acid are pouring out of the smelter stacks of Montana. The time is not too far distant when the sulphide ores of that section will be exhausted and when that time comes its phosphate deposits will in all probability be absolutely worthless. The people of the cities need cheaper food supplies. The farms of the country are starving for the phosphate which would add very materially to their production.

The restriction of western development pinches the wage earner's family in the industrial centers of the East, it pinches the West and it may become much more serious than has yet been imagined. The way to open up the West, Mr. Secretary, is to open up the West. The way to resume is to resume.

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## ANOTHER LABOR WAR

### THREATENED IN COLORADO

Just before going to press we learn that an effort to repeal the provision of the Colorado Industrial Commission Law is being supported by threats of civil war in case the demands of the agitators are not met by the Colorado Legislature.

Mr. Grant Hamilton, of Washington, D. C., after denouncing the law in Colorado is reported to have said, "No court, State or Federal, has the right to say whether a law is constitutional or not. The Supreme Court of the United



States has usurped that right, but there is no warrant for that usurpation. Therefore, there can be no force in the argument that labor must first seek to have the courts determine the constitutionality of this law. I represent the crystalized sentiment of the American workers on this law and I say that they will resist it to the uttermost. We will not submit to the fetters of slavery. We are inspired by the same spirit of revolt that moved our revolutionary forefathers. If this law is not repealed we will have recourse to that same power. We have the courage to revolt and will not be found wanting."

Mr. Ed Doyle, of the U. M. W. of A., expressed himself, as reported by the press, as follows:

"That there have been no important strikes in the last two years was not due to this law, but to the fact that unemployment was less, that all factories were working overtime and the competition between men for work was less. The coal miners remained quiet largely because they had not recovered from their last strike, but they are recovering now, and soon again will demand the right to belong to labor organizations and that that right be recognized by the mine owners. They are recovering, another strike is certain, and you all know what that means. Labor will not submit to this law any longer. I reiterate the warning Mr. Hamilton gave a while ago. The spirit of revolt will not be quelled while this law remains on the statute books of this State."

The effective carrying out of the threats of Mr. Hamilton and Mr. Doyle means the destruction of democracy. A republican form of government is based upon the control of the majority as represented by legislatures to make, courts to construe and administrative officers to execute, the law. The principle involved in the surrender of a legislature to the threat of a minority is indeed dangerous to the liberties of the people.

Mr. Doyle evidently believed that another strike in Colorado means the absolute setting aside of all the constitutional rights which are guaranteed by the constitution, the destruction of prop-

erty, bloodshed and murder. He does not hesitate. The recognition of organized labor by the operators is of greater importance than industrial peace.

The failure to repeal a law at the demand of a minority (which for a temporary period of investigation during which the demands of the parties to an industrial dispute may be considered and a remedy ordered) is to be made the excuse for another industrial war.

The real issue, as in the previous war, is not the right to belong to a labor organization which nobody disputes, but the recognition of the labor union by the employers. To accomplish this the Industrial Commission law is to be openly violated, the authority of the courts to be denied, the principle of democracy crucified.

The Constitution is the bulwark of the minority against injustice. The courts must uphold the Constitution and construe the law. Those who openly violate these principles may be numerous enough to be classed as rebels but never, until anarchy shall have put democracy under its feet, shall they be classed as patriots.

#### COLORADO INDUSTRIAL DIS- PUTES INVESTIGATION LAW

To meet the many requests to this office for the text of the Industrial Disputes Investigation provisions of the Colorado Industrial Commission Law we have had same printed and copies will be furnished upon request. For those who only desire general information we reproduce the principal features of the law as follows:

§29. Employers and employes shall give at least thirty days' notice of an intended change affecting conditions of employment with respect to wages or hours; and, in every case where a dispute has been made the subject of an investigation, hearing, or arbitration by the Commission, or the board, until the dispute has been finally dealt with by such Commission, or board, neither of the parties nor the employes affected, shall alter the conditions of employment with respect to wages or hours, or on account of the dispute, do, or be concerned in doing, directly or indirectly, anything in the nature of a lock-out or strike, or a suspension or discontinuance of work or employment; but the relationship of employer and employe shall continue uninterrupted by the dispute, or anything arising out of the dispute; but, if either party uses this or any other

provision of this Act for the purpose of unjustly maintaining a given condition of affairs through delay, such party shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not more than one hundred dollars.

§30. It shall be unlawful for any employer to declare or cause a lock-out, or for any employe to go on strike, on account of any dispute prior to or during an investigation, hearing, or arbitration of such dispute by the Commission, or the board, under the provisions of this Act; provided, that nothing in this act shall prohibit the suspension or discontinuance of any industry or of the working of any persons therein for any cause not constituting a lockout or strike, or to prohibit the suspension or discontinuance of any industry or of the working of any persons therein which industry is not affected with a public interest; provided, further, that nothing in this Act shall be held to restrain any employer from declaring a lockout, or any employe from going on strike in respect to any dispute after the same has been duly investigated, heard, or arbitrated, under the provisions of this Act.

§31. Nothing in this Act shall be construed to make any findings, determination of the rights of said parties, decision or award of said Commission or of any board of arbitration appointed thereby upon the facts of such controversy, binding, conclusive or enforceable upon any of the parties thereto, or affected thereby, unless

(1) Such parties have agreed in writing prior to the commencement of any such investigation or arbitration, or during the continuance thereof, to accept and be bound by the terms of such findings, determination of rights, decision or award, and then only to the extent in such written agreement provided; or,

(2) Unless said parties shall agree to accept and be bound by such action of the Commission or board of arbitration after the same has been made known to them; provided, however, that in either such instance, the findings, determination of rights, decision and award of said Commission or board of arbitration, when confirmed by formal order of said Commission, shall be and remain in full force and effect, according to the terms and for the time provided in such formal order of the Commission, and shall be binding, effective and enforceable upon the parties thereto, as any finding, order or award of the Commission under the provisions of this Act.

§32. Any employer declaring or causing a lockout contrary to the provisions of this Act shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not less than one hundred dollars (\$100.00) nor more than one thousand dollars (\$1,000.00) for each day or part of a day that such lockout exists.

Any employe, who goes on strike contrary to the provisions of this Act shall be guilty of a misdemeanor and, upon conviction thereof,

shall be punished by a fine of not less than ten dollars (\$10.00) nor more than fifty dollars (\$50.00) for each day or part of a day that such employe is on strike.

§33. Any person who incites, encourages, or aids in any manner any employer to declare or continue a lockout, or any employe to go or continue on strike, contrary to the provisions of this Act, shall be guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine of not less than fifty dollars (\$50.00), nor more than one thousand dollars (\$1,000.00), or by imprisonment in the county jail for a term of not more than six months, or both such fine and imprisonment, in the discretion of the court.

A complete discussion of the workings of this law by Wayne C. Williams, a member of the Colorado Industrial Commission will be found in the proceedings of the 19th Annual Session of the American Mining Congress.

### DERING AMPLY FITTED FOR HIS NEW JOB

Effective February 19, Jackson K. Dering became president of the O'Gara Coal Company, a company which is known nationally. Owing to various complications in its internal business affairs the highest type of ability is required to administer it. In seeking out Mr. Dering for this unusual responsibility the O'Gara Company could have made no wiser choice. Mr. Dering combines an exceptional sense of business acumen with a geniality of manner which is so necessary to the proper administration of any extensive business.

As one of the most active members of the American Mining Congress, Mr. Dering has been of great service in the work which we have been carrying forward. He was an important factor in making the recent Mining Congress Convention in Chicago the success it proved to be. His work for the American Mining Congress is ample evidence that his activities are not limited by his desire to push his personal interests. He has been willing to put his shoulder to the wheel and work for the common good of the mining industry.

### USERS OF COAL WOULD DO MORE INTELLIGENT BUYING

The increasing prices of coal are having the effect of causing more systematic purchases of fuel. Numerous representatives of large users of coal have been making inquiries recently at the Geological Survey and at the Bureau of Mines and gathering information with the idea of purchasing their fuel more intelligently. In addition to careful analyses of coals and to studies of coal fields, maps are being drawn in the interest of individual users. These maps show all of the mines which are possible sources of fuel for individual plants and contain valuable information as to the kind of coal available, transportation facilities and other data.



# MORE ACTIVE WORK IN METAL MINING DISTRICTS TO BE BEGUN BY BUREAU OF MINES

## New Mine Rescue Cars Will be Used in Tour of Western States in Effort to Advance Mine Rescue and First-Aid Work—Advice Will be Offered Mine Operators

Very active work on the part of the Bureau of Mines in the metal mining field will begin early in April, when it is expected to have ready for use the three new mine rescue cars which are in progress of construction. The cars will be stationed at Butte, Mont.; Reno, Nev., and Raton, N. M. The Butte car will be assigned to Montana, Wyoming and Idaho. The territory of the Reno car will be Nevada, Utah and part of California. The Raton car will be used principally in New Mexico, Colorado and Arizona.

These cars, which will be of all-steel construction, eighty feet long, are the last word in equipment designed for this use. While the cars are primarily to be of service in mine rescue work, an important feature of their use will be of an educational nature. The cars will be sent to mining camps, where their expert personnel will offer advice to mine operators and give instruction in mine rescue and first-aid work.

Each car will have a complement consisting of a mining engineer, who will be in charge; a mine surgeon; a foreman miner; a first-aid miner; a clerk and a cook. It is expected to keep the cars on tours during at least ten months of the year. Stops will be made in every mining camp, where enough persons are engaged in the industry to make it practicable. At each of these stops the mining engineer will confer with the mine operators of the district and, if they will permit, will look over their mines with the idea of making recommendations toward improvements which will tend to increase safety or promote conservation. The surgeon will investigate the sanitary and health conditions in the camp and make recommendations for their improvement, if it should be necessary. The foreman and first-aid miners will form classes among the operatives for instruction in mine rescue and first-aid work.

Each of the new cars is equipped with a moving picture apparatus and with stereopticons, which will enable the men to give lectures to the general public in each mining camp on subjects looking to the improvement of conditions and making possible increased safety.

While a general territory has been assigned to each car, it is not the intention to lay down any hard and fast recommendations as to where the cars may go. This would be true especially in case of a disaster. If an accident should take place in

any mine, the car which could reach the scene quickest would be dispatched.

The usefulness of the mine rescue cars has been increased greatly by the cooperation of the railroads. Practically all railroads in the mining regions have agreed to haul the bureau's mine rescue cars gratis.

The three new cars were to have been ready for service February 1, but owing to the congested state of practically all industrial establishments it has been necessary to permit the manufacturers to have more time to make delivery.

## SUPREME COURT REFUSES TO HALT COAL MINE SUIT

Postponing final action as to whether labor unions may be sued for treble damages under the Sherman anti-trust law, the Supreme Court of the United States has refused to interfere with trials ordered in Arkansas of suits for \$1,283,000 damages brought against the United Mine Workers' Union by the Coronado and other Arkansas coal companies.

After trial another appeal may be brought to the Supreme Court.

A writ of prohibition, sought by the union, to prevent Federal Judge Youmans of Arkansas from proceeding with the trial of the coal companies' action pending Supreme Court review of legal questions involved, also was denied.

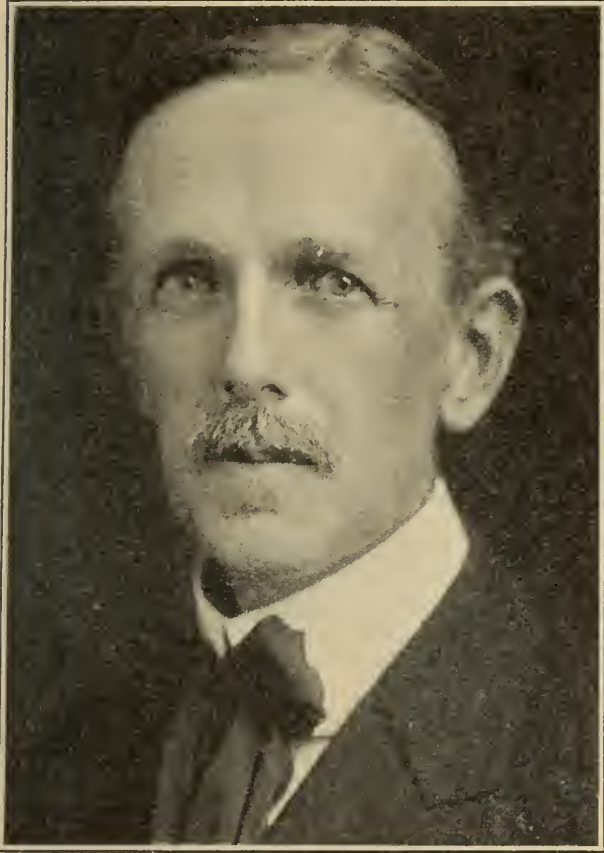
In asking Supreme Court review the union claimed exemption from litigation, denying that the Sherman law contemplates suits against unions.

Denial of review requested, the union contended, would put it to great expense in defending the Arkansas litigation and also set a precedent for other suits against unions, with possible attachment of union property. The coal companies contended that the union should appeal to the Supreme Court only after trial in Arkansas and a final decision there.

## Rice Heads Committee

George S. Rice, chief mining engineer of the Bureau of Mines, has been made chairman of the Standardization Committee of the mine section of the National Safety Council. This committee will study accident statistics, ropes and safety devices, mine hygiene and sanitation, mine fire prevention, mine fire fighting, mine rescue, first aid and mine rescue contests.

**GOVERNMENT EXPERTS WELL  
KNOWN TO MINING MEN**



N. H. DARTON  
Geologist

N. H. Darton has been a geologist in the U. S. Geological Survey since early in 1886. He has investigated the geology of many portions of the country and published numerous reports. Some early work was on the Atlantic Coastal Plain, the Florida phosphates and the geology of the regions about Washington, Philadelphia, Richmond, New York, Trenton, Baltimore and Fredericksburg. He prepared the greater part of the geologic map of New York State published by the Survey in 1894.

Later the geology of the Central Great Plains was made the subject of an extensive report. Researches were also made in the Black Hills, Badlands, Bighorn Mountains, Rocky Mountain Front and the Southeastern Colorado region. A geologic reconnaissance was extended across New Mexico and Arizona, including a preliminary geologic map of the Grand Canyon, and later this work, with additional study, served as a basis for a guide book to the geology along the Santa Fe Railroad, which the superintendent of

documents has recently reported to be the Survey's "best seller."

Mr. Darton's latest work has been studies of geology of New Mexico, especially of the great series of "red beds" and their prospects for potash. As a result of this study a site was selected for a deep boring now in progress, to explore for potash the salt deposits underlying Northern Texas.

Although Mr. Darton has reported on a great variety of economic resources, his special interest for many years has been artesian waters, and he has made numerous predictions as to deep well prospects in various regions. These forecasts have been verified in a most impressive manner and a large amount of water obtained for municipal, irrigation, railroad and domestic use. One notable prediction was for 3,000 feet at Edgemont, S. D., where at 2,965 feet a daily flow of 500,000 gallons was found. Other predictions in the Southwest have yielded water for the Santa Fe Railroad at several places. From 1896 to 1907 he was in charge of underground water investigations in the Survey mainly in the West, and with various assistants brought together a great fund of facts bearing on this important resource.

From 1910 to 1913 Mr. Darton, as geologist of the Bureau of Mines, investigated the occurrence of explosive gases in coal mines in Pennsylvania and Illinois. The result was his report published as Bureau of Mines Bulletin No. 72. In this connection he also prepared a contour map showing the structure of the northern anthracite coal fields.

Mr. Darton is author in whole or in part of twenty-seven of the folios of the Geological Survey, five professional papers, ten water supply papers, twenty bulletins, four papers in annual reports and some special maps and other publications, besides many articles in scientific and popular journals. Mr. Darton is a member and fellow of many scientific societies here and abroad, including several geological societies, the Institute of Mining Engineers and the Mining and Metallurgical Society.

### **PAINT MANUFACTURERS APPEAL TO THE BUREAU OF MINES**

Paint manufacturers in the United States are uneasy, fearing that some development in the war situation may cut them off from their supply of chalk. Chalk, which is imported to the extent of 200,000 tons annually, comes largely from Dover, England. It is used principally for sizing paints and in the manufacture of putty. It is feared that the demand for high-class chalk could not be met immediately in the United States in case something should interfere with importations. The matter has been called to the attention of the Bureau of Mines and its division of mining technology is looking into the matter.



## **PHILLIP N. MOORE ELECTED TO HEAD MINING ENGINEERS**

Mr. Phillip N. Moore, of St. Louis, has been elected president of the American Institute of Mining Engineers for the ensuing year.

The annual report of the retiring president, Dr. L. D. Ricketts, shows a substantial growth of membership during the past year and very marked advancement in all lines of the work. A very substantial contribution was made by Dr. James Douglass for the extension of the library of the united societies.

The annual reception and banquet held at the Hotel Astor was largely attended. The discussions of the meetings were of great merit and the one hundredth and fourteenth meeting of the institute was one of the best in its history.

Means for conserving the country's phosphate rock deposits, the latest developments in flotation and the commercial use of potash as a blast furnace by-product were a few of the important subjects taken up by the American Institute of Mining Engineers in their sessions in New York, February 20.

The cream of the phosphate rock production of the country, according to Dr. W. C. Phalen, of the U. S. Bureau of Mines, has been wastefully depleted because of a preference shown for European exporting over American fertilizer manufacturers. Phosphate rock deposits are now found in nine different States and Dr. Phalen stated that the exportation of high-grade rock during the past ten years averaged close to half of the country's output.

In discussing the year's development of the flotation process J. M. Callow, of Salt Lake City, declared that the results obtained by pneumatic flotation on all classes of ores establish the advantages of this method over the so-called agitation process. The experiments of many of the leading copper companies of the West were cited by Mr. Callow as indicative of the success of flotation processes.

Many large industrial and mining companies of the country are united this week in contributing the intimate results of experiments which have proved profitable in the past year. A striking example of this was shown in a detailed explanation by R. J. Wysor, of Bethlehem Steel Company, of the marketing of potash as a by-product from the blast furnace.

The general subjects discussed February 20, were non-metallic minerals, iron blast-furnace practice and flotation. The Institute's annual dinner, at which President L. D. Ricketts acted as toastmaster, was a great success. The dinner was in honor of Herbert C. Hoover, a vice-president of the Institute and distinguished during the past two years as head of the Belgian Relief Commission.

The engineer put on his war bonnet February 21, and discussed preparedness with the Naval Consulting Board. The immediate subject was the erosion, or the hardening of the surface of guns.

In an effort to increase the life and efficiency

of guns the Naval Consulting Board met with the Institute members. Many of the country's leading scientists were in attendance and a committee headed by Dr. Hudson Maxim led the discussion. Dr. Henry Fay, of the Massachusetts Institute of Technology, presented the results of experiments showing the damage done by erosion.

The interest of the mining engineers in the country's military preparedness was further demonstrated February 22, when the convention moved by special train to West Point for an inspection of the Military Academy equipment.

A report of the Institute Committee on Safety and Sanitation showed that mining companies in every section of the country are taking every possible precaution for the avoidance of accident and to encourage the safety first education of the employe. This movement, it was noted, has in recent years assumed tremendous proportions with favorable results both to the employe and the mine operator. The Convention formally studied the facts attendant upon the Pennsylvania Mine fire at Butte, Montana, which cost the lives of twenty-one men.

The first public exhibition of technicolor standard films in natural color was given before the Institute members. This was but one of the many social features provided for the members and their wives during the week's sessions.

The next meeting of the American Institute of Mining Engineers will be held in St. Louis and in the mining districts of Missouri, Kansas and Oklahoma in September.

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## **FRANCIS C. RYAN APPOINTED ELECTRO- METALLURGIST AT SEATTLE**

One of the principal activities of the mine experiment station at Seattle will be along the lines of electro-metallurgy. For this reason more than usual interest surrounds the recent appointment of Francis C. Ryan, of Harrisburg, Pa., to the post of electro-metallurgist at Seattle. Mr. Ryan is a graduate of Lehigh University. The major portion of his experience has been with the United States Smelting Company in its electrolytic refineries. He is 33 years of age. His salary will be \$2,400.

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## **Report on Safety Conditions**

A coal mine near Pittsburgh, Pa., by request of the operators, was examined by J. J. Rutledge and E. H. Denny, of the Bureau of Mines, as to safety conditions. A comprehensive inspection was made, and the mine completely sampled, coal, dust and air samples being taken. An oral report of conditions, together with recommendations, was made to the company officials.

## SUMMARY OF PRINCIPAL WITHDRAWALS AND RESTORATIONS DURING THE PERIOD MARCH 4, 1913, TO JANUARY 31, 1917. (IN ACRES)

|                   | <i>Outstanding<br/>withdrawn<br/>March 4, 1913</i> | <i>Withdrawn<br/>during<br/>period</i> | <i>Restored<br/>during<br/>period</i> | <i>Outstanding<br/>withdrawn<br/>January 31, 1917</i> |
|-------------------|----------------------------------------------------|----------------------------------------|---------------------------------------|-------------------------------------------------------|
| Coal.....         | 65,410,464                                         | 669,304                                | 20,850,618                            | 45,229,150                                            |
| Oil and gas.....  | 4,817,706                                          | 2,312,899                              | 692,397                               | 6,438,208                                             |
| Phosphate.....    | 3,367,378                                          | 489,601                                | 1,350,581                             | 2,506,398                                             |
| Potash.....       | 133,829                                            | 211,384                                | 214,584                               | 130,629                                               |
| Power site.....   | 1,857,258                                          | 772,767                                | 199,299                               | 2,430,726                                             |
| Public water..... | 86,216                                             | 117,782                                | 3,022                                 | 200,976                                               |
| Total.....        | 75,672,851                                         | 4,573,737                              | 23,310,501                            | 56,936,087                                            |

TO CLASSIFY COAL MINES  
ON RAILROAD BASIS

Matters involving cooperation with the War and Navy Departments, in case of war, have occupied much of the attention of officials in Washington during the past month. The Geological Survey and the Bureau of Mines are in positions to be of special service in case it became necessary to mobilize the mineral industries of the country so as to insure a maximum of efficiency.

That it will be necessary for the Government to regulate coal production, much after the manner found necessary in the belligerent countries of Europe, is not doubted. The only complete information as to the producers of coal, and of other minerals, is possessed by the Geological Survey. It can be seen that very early after the opening of hostilities the War Department would have to call upon the Geological Survey for a great deal of information in connection with the coal supply. The Survey also has complete information as to the sources of supply for the by-product ovens of the country. One of the first steps that would have to be taken in case of war would be an arrangement whereby the by-product ovens could be kept continuously supplied with coal.

In order to have this information in another form which would be of especial service in case of war, and from the fact that the information is desirable anyway, the Survey is recompiling its list of coal mines on a railroad basis. At present this information could not be obtained without considerable difficulty. The data always have been classified by States.

COKE BULLETIN FOUND TO BE  
OF ESPECIAL VALUE

The H. Koppers Co., commenting on C. E. Leshner's recent coke bulletin says, "We have gone over this bulletin carefully and will say that it is the best and most complete publication on this subject ever made by the Geological Survey.

"Your new efforts in the shape of charts and diagrams and your chapter on the distribution of the consumption of coke are especially valuable." Mr. Leshner, the author of the bulletin, is the statistician of the Geological Survey.

BUREAU OF MINES INVESTIGATES  
OILS FROM WOOD WASTE

Oil from waste wood secured in the wood distillation industry may soon come into competition with many coal tar products now in use. In cooperation with the Bureau of Mines, the Forest Products Laboratory recently completed a number of tests at Salt Lake City to determine the value of certain wood oils for the flotation process. Excellent results were obtained and it appears very probable that these oils will be placed on the market in competition with many coal tar products now in general use. Some of these wood products, which at present have practically no market value, will become a source of revenue to the wood distilling industry.

In producing paper pulp from longleaf pine timber a quantity of turpentine is driven from the wood. This turpentine is adulterated to such an extent that it is usually of little or no commercial value. Recently, however, a method has been developed by the laboratory whereby sulphate turpentine from Southern pine can be purified and made as acceptable to consumers as gum turpentine. Tests of the process on a commercial scale will be made very soon at one of the large paper mills in the South.

Recent experiments with sodium fluoride by the laboratory are directly responsible for a marked demand for that chemical. A number of lumber companies are experimenting with it in large quantities as a sap stain preventative, in which respect it has proven much more effective than sodium carbonate, which is generally used for this purpose. One mining company is now using it for the preservation of mine timbers and a railroad company treating over a million ties per year is seriously considering its use in place of zinc chloride.

## Added to Committee

Walter Douglas, president of the American Mining Congress, has been appointed by Van H. Manning a member of the committee which will draft a new mining code for submission to the Congress of the United States. Mr. Douglas will take the place of his father, Dr. James Douglas, on the committee. Dr. Douglas was prevented from serving due to ill health.



# BUREAU OF MINES WOULD SUPERVISE USE OF GOVERNMENT FUEL

George S. Pope Appears before Committee on Mines and Mining of the House of Representatives and Explains how Great Saving Can Be Effected by Bureau's Engineers

"The annual coal purchases of the Government amount to between \$7,000,000 and \$8,000,000. This fuel is selected and used sometimes in the most satisfactory manner, but frequently in ways inefficient and wasteful," said Geo. S. Pope, of the Bureau of Mines, to the House Committee on Mines and Mining last month. Continuing, he said: "The supervision of its use is sometimes expert, but is often far from satisfactory, so that engineers competent to judge are of the opinion that the practices of the Government in the economical use of its fuel are open to improvement of the same order of magnitude as have been realized by many larger users of fuel when centralized, persistent effort has been made to reduce fuel costs. A saving as moderate as 10 per cent, which is believed to be well within a reasonable expectation, indicates the magnitude of the sum involved. There is at present waste in the selection of fuels, waste due to inefficient design of equipment, and waste in the manipulation of the fires. There is a lack of expert instruction given to the man firing the fuel, a frequent lack of information by plant managers as to what other plants are attaining, and a lack of knowledge of standards by which to measure actual performance.

"There are several ways whereby the Government can readily improve on its methods of selecting, purchasing, supplying, and using fuel at its various institutions. A large saving can be effected by selecting fuel with special attention to quality and cost. In considering the factor of cost, it becomes necessary to consider not only the cost of the fuel at the mine, or the cost of fuel delivered at the point of consumption, but also the saving which can be made in cost of transportation by the shipment of this fuel over land-grant transportation lines. I would like to mention later something in detail relating to the subject of land-grant transportation.

"In order to determine the cost of fuel with respect to quality, it becomes necessary to reduce the same to a common standard of calorific value, that is, the cost per 1,000,000 British thermal units. This, however, while being an important factor, must not be the only criterion in the selection of fuel for any specific purpose. After the cheapest fuel has been determined upon on the calorific value basis, it becomes necessary to make further analysis of the same for physical and chemical properties, to determine its fitness for use for any special purpose, and the efficiency with which such fuel can be

utilized in the fuel-burning equipment which may be in use, or which can be provided to the best advantage. By processes of elimination the most efficient and economical fuel for use for any particular purpose can be determined upon. This is, perhaps, the most important work in connection with the selection, purchase, and supply of fuel for government use, and is the type of work for which the Bureau of Mines is infinitely better equipped than any other bureau of the Government. Such work requires the services of fuel engineers who have made practical and scientific investigations in the combustion of fuel, and who are experienced in all phases of the art. Fuel for all Government departments, with possibly one exception, the Navy Department, may be selected by persons who do not possess any special knowledge in any branch of the art; hence it is only logical to assume that much improvement would result if the work could be done under the supervision and advice of engineers specially trained for such work. The Government has appropriated large sums of money annually to the Bureau of Mines for the express purpose of testing fuel with a view to securing a better understanding of fuel characteristics and the proper combustion and economical use of the same. While the information obtained has been made available to the public in the form of bulletins from time to time, yet it is found that much of the information given out by the Bureau is not applied in the management of Government plants.

"The Bureau of Mines is prepared to serve in a broader field of endeavor, namely, the application of its results to the practical side of the selection, purchase, and use of fuel by the United States Government. The experimental work carried on during the several years past by the Bureau of Mines has developed to a remarkable degree, a better understanding of the processes of combustion, and the application of certain methods of treatment and use of fuels to produce the highest efficiency. As fuel becomes more and more scarce, and the cost of production increases, the cost of fuel to the consumer must necessarily increase, making it more and more important that fuel be selected and used with the highest degree of efficiency.

"This is an age of specialists. If water comes through the roof of our house, we do not send for a laborer to relieve us of our troubles, we send for a tinner, who makes this work a specialty. If we suspect a leak in our plumbing system, we do not call upon the carpenter, the



plasterer, or the steam fitter. We send for a plumber. If we suspect still some other type of leak, we may call upon a lawyer. When we suspect that we are not getting full value received for Government moneys expended for our fuel supply, why should we not call upon the expert fuel engineer, who has especially fitted himself for this art, to find out where such leak exists, and to recommend the proper remedy.

"Commercial enterprises appreciate more fully every year the knowledge possessed by the experts of the Bureau of Mines in the fuel industry, and the assistance which the bureau is prepared to render in solving their fuel problems. Commercial enterprises are calling upon the bureau constantly for advice and assistance in this work. Government departments do not seek this assistance of the Bureau of Mines to the same degree. Why? Anyone employed in the Government service for any length of time will readily appreciate the answer. This unfortunate condition is brought about simply because when a man is assigned to a certain line of work, he does the same to the best of his ability and makes an effort to convince his superior that he is making a success of his assignment. If he is especially industrious, he may endeavor to make a study of his line of work outside of his hours of employment. He may be doing very good work, considering the training which he has had for the work, but it is not reasonable to suppose that he can become as efficient as the engineer who has made a study of a particular phase of the work. His success with his superior depends largely on what he can make him think he is doing. The employee is naturally loathe to have any expert in his particular line take any action or to recommend any change which will at all reflect on the character of his work. He resents any suggestions in this regard.

"If you were to call upon various Government departments and their branches for any expression regarding the advisability of such action as proposed in this bill, you would probably find that a majority of such departments would take a broad view of the subject, and not allow personal considerations to predominate when it was realized that the Government would be greatly benefited financially. You would in all probability, however, find a few branches of the Government service which would express general disapproval for the very reasons herein set forth. I have known of certain branches of Government departments stating that they have expert engineers who handle their fuel problems. I know of one branch of a department in particular, which if called upon for a statement on this subject, would probably claim to have a corps of expert engineers for this special work. I have positive information to the effect that this particular branch of the service has not at the present time, nor has had for months past, one single fuel engineer to pass judgment on its fuel purchases, which amount annually to over \$1,500,000.

"In this connection it may be stated that the Government has aided practically all railroad companies throughout the central and western

States in the construction of their transportation lines by the granting of public land and otherwise rendering financial assistance. In consideration thereof it has been agreed that the Government shall receive certain reduced tariffs on passenger service and freight shipments. Such reductions therein amount to from a few per cent of the regular rate to a hundred per cent. Transportation charges on coal form perhaps a larger percentage of its total cost than on almost any other commodity used by the Government, and the transportation of coal should therefore be a prime consideration. On the contrary, many offices charged with the supply of fuel neglect this consideration entirely. There is a great tendency to follow precedent in all Government transactions, and only the more courageous Government officials will venture to make a change.

"As stated in the previous hearing, the Bureau of Mines cannot instruct, but can act only in an advisory capacity, and our advice may be followed or not, as the department concerned may see fit. At the present time the Bureau has no power by which it can compel the various departments of the Government to follow the instructions of the Bureau. In order to secure this there must be some compelling force back of some agency of this kind, so that when the employes of the Bureau of Mines go into a plant and make their investigation we can see that their recommendations are carried out in a proper way, and not allow the continuance of a method by which the fireman is left to be the judge."

#### COAL PRODUCTION FROM MANY NEW SOURCES REPORTED

As a result of the increased activity in coal mining, the statistical division of the Geological Survey is being taxed to keep up with new production. Many new mines are being opened. Old mines which have been shut down for years again are being worked, while much coal is being loaded from slack piles. Since much of this new production comes from small producers it is extremely difficult to keep up with this new production, but due to the very excellent system, which has been perfected through many years by the Survey, it is believed that little or none of this production is escaping tabulation.

#### Why Statistics Vary

There are several reasons for the slight variations which appear in statistics as compiled by the Geological Survey and by the individual States. For instance, Colorado includes waste in its figures showing the total amount of coal produced. On the other hand, the State of Washington excludes waste. Various minor practices of this character cause slight differences in totals.



# BUREAU OF MINES TO HAVE STATIONS AT MOSCOW AND CORVALLIS

Cooperative Agreement Signed with the University of Idaho and with the Oregon State Bureau of Mines and Geology—Consulting Metallurgists Named to Take Charge of Work

Through cooperative agreements with the University of Idaho and the Oregon Bureau of Mines and Geology, it has been possible for the Bureau of Mines to provide for two new and important stations. One will be at Moscow, Idaho, and the other at Corvallis, Ore. As the other contracting party furnishes the Bureau of Mines with offices, laboratory equipment and various facilities, including personal services, it makes it possible for the bureau to use its entire appropriation for this work for actual experimentation. In fact, it makes it possible for the bureau to double the amount of work it would be able to do at a station operated solely by the bureau.

E. K. Soper and Robert R. Goodrich have received appointments as consulting metallurgists and will be in direct charge of the work conducted at the Moscow station. Will H. Coghill also has received an appointment as a consulting metallurgist of the bureau and will be in charge of the work at Corvallis. He will be assisted by Arthur M. Schwartley, who has just been made an assistant metallurgist of the bureau.

Fellowships in metallurgy have proven to be an important outgrowth of the cooperative agreement with the University of Utah. These fellowships have been so advantageous to the University and to the Bureau of Mines that it is probable that arrangements for them will be made at each of the other stations. In some cases the matter of fellowships will depend upon contributions by local mining companies.

## HAZARDS OF MINING SHOWN BY LEGISLATIVE ACTIVITY

"Nothing more clearly accentuates the hazard of the mining industry than does a review of legislative activities with respect to it. The protection of the men who dig in the dark underground for the raw materials from which all modern industry is constructed, has long been a matter of state and federal concern, surpassing even that accorded ocean and railway transportation. Safety in mining has always received the attention rightly the due of the most hazardous of all the industries. Due to the high relative accident ratio in mining, this industry was one of the first to receive state and federal assistance for the purpose of increasing the safety of the workmen." (Extract from address made by Herbert M. Wilson.)

## POTASH PROSPECTING GOES AHEAD RAPIDLY AT CLIFFSIDE

Satisfactory progress is being made in the drilling being conducted by the Geological Survey at Cliffside in its effort to discover deposits of potash. The drill is now approaching the big salt bed which is reached at a depth of 725 feet.

Owing to the similarity between conditions in the red beds area of the Southwest and that of the area in which the German potash deposits are found, the Geological Survey is undertaking to prospect this region in the hope of developing a domestic supply of soluble potassium salts. While the general conditions are the same under which the German potash deposits were laid down, it is recognized that the essential minor conditions which would be necessary to such a deposit may not exist in the Cliffside region. It is known that there was a great inland sea in that part of the United States and that it was largely taken up by evaporation. It has not been established if it evaporated to the last dregs. Even after the great salt beds had been laid down it is recognized that drainage may have been accomplished and that the highly soluble potash salts, which would be among the last ingredients of the water to be laid down, may have escaped. There are geological evidences however, that the center of the maximum evaporation was at Cliffside where the Survey is conducting its drilling operations.

## LUMINESCENCE EXHIBITED BY NUMEROUS SUBSTANCES

The property of triboluminescence exhibited by zinc blende is not confined to that mineral, but is shown by diamonds, sugar, quartz, dolomite, and several organic compounds, according to the Geological Survey. Probably, also a number of other substances are triboluminescent. This property is a variety of the general phenomenon of luminescence which is exhibited by many substances, such as the photoluminescence of fluorspar, the thermoluminescence of scheelite, the electroluminescence of some rarefied gases, and various other forms of luminescence. The property of triboluminescence is shown rather faintly when two cubes of loaf sugar are rubbed together in the dark.

Triboluminescence is a property inherent in certain substances. No satisfactory explanation for it has been offered.



### **SAYS FATALITY RATE CAN BE REDUCED BY TWO-THIRDS**

"That it is possible to reduce the fatality ratio for the mines of the United States to one-third the present rate is evidenced by the great reduction on accident frequency effected in the coal mines controlled by the United States Steel Corporation through its Department of Safety. The methods and the result of this work have blazed the way for others to follow. For example, in the most dangerous coal field we have, in the Pittsburgh District of Pennsylvania, the accident ratio of the large group of mines operated by the H. C. Frick Coke Company was, a few years ago, as great as that in neighboring mines operated by other companies. A year ago the fatality rate in the mines of this company was 1.52 per 1,000 employed, as compared with a rate of 2.36 per 1,000 of underground workers in neighboring mines. In the West Virginia mines of another subsidiary of this corporation, namely, the United States Coal & Coke Company, the fatality rate last year was 0.75 per 1,000 employees, compared with the average for the state of 7.94." (Extract from address by H. M. Wilson.)

#### **To Go to Chile.**

Waldemar Lindgren, head of the department of geology of the Massachusetts Institute of Technology, has advised the Geological Survey that he will leave soon for the Braden copper mines in Chile, where he will spend several months doing geological work.

### **FEDERAL RESERVE BANKS REPORT ON MINING INDUSTRY**

The Federal Reserve Board has received the following comment on the mining industry from the managers of the regional banks:

Kansas City.—Colorado's metal output for 1916 sets a new record for the industry in that State. The value of five metals only, *i. e.*, gold, silver, copper, lead, and spelter, exceeding the value of 1915 by more than 25 per cent, although the past season was not favorable to the production of gold, the cost of mining per ounce, placers excepted, being rated at the highest in the annals of the industry. Reliable figures show that the value of zinc, lead, and calamine ores produced in the Missouri-Kansas-Oklahoma district for 1916 exceeds the total of 1915 by 34 per cent. The new year opens auspiciously for continued prosperity in the mining industry with active work in the developing of prospects.

Rapid advances in the price of crude oil in the Kansas and Oklahoma fields have continued, the quotation now standing at \$1.70 per barrel with expectation of further increases. The present price is the highest ever posted in these fields. Owing to this increase much new work is being planned, but is seriously delayed by lack of water for drilling purposes. Leasing is exceedingly active.

There has been some threatened disturbance among the laborers in the coal fields in Colorado, but this is purely local in character. Labor conditions may be said to be better than normal for this season of the year.

Minneapolis.—Mining operations for the coming season will be very active. Northern Minnesota concerns are holding their forces together as well as they can by employing men on stripping work and other winter operations in anticipation of a record season. In the copper-mining districts of northern Michigan and Montana production is still maintaining record figures, and the mines expect during 1917 to make a large increase over the remarkable figures of last year.

Dallas.—The advance in the prices of crude petroleum has stimulated business in the oil fields, and conditions are reported satisfactory. The movement of refined oil from Port Arthur in December was heavier than in the month previous and has contributed to make an unusually profitable season at that port. The scarcity of coal continues to be felt and has caused a heavy advance in prices. Reports from Oklahoma are that a few of the mines have opened and it is believed that the remainder will soon do so. It is expected that the controversy over the wage situation will soon be settled and normal conditions in the mining districts resumed.

Atlanta.—The mining industry in the Birmingham district is now regarded as satisfactory to the operators. The car shortage is greatly lessened. Consumers are in the market for renewal of contracts that expire in the main on July 1, the contract period. There is a great demand for all miners and mine laborers, not only in coal mining but in ore, limestone, and quarries. Some laborers are still leaving the district for northern labor markets. Prospects for profits in the coal industry are better than for many years.

Cleveland.—Oil and coal producers report splendid business to the extent that deliveries can be made. There is still an acute demand for labor of all grades, yet on account of the car shortage in the coal regions there is some restlessness because of inability to continue employed full time.

#### **Joins Bureau of Mines Staff**

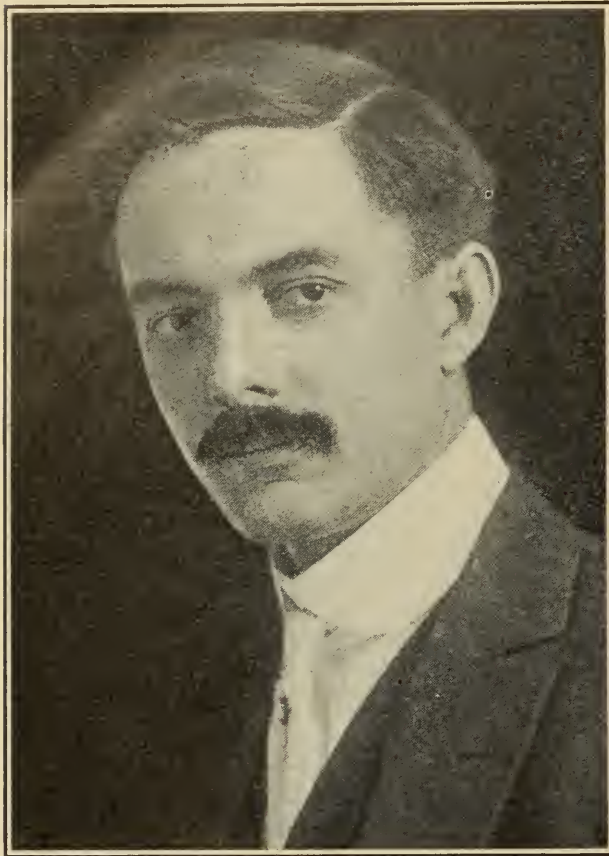
J. W. Kingsbury, of Salt Lake City, son of the former president of the University of Utah, has been added to the staff of the Bureau of Mines. He has been assigned to duty as assistant to Albert H. Fay in the statistical division.

#### **Hess Off on Long Trip**

Frank L. Hess, of the United States Geological Survey, has left Washington on an extended trip during which he will look closely into the situation of the rarer metals in Colorado, New Mexico, Arizona, California, Nevada, Utah and Washington.



# GOVERNMENT EXPERTS WELL KNOWN TO MINING MEN



JOSEPH B. UMPLEBY  
Geologist

Joseph B. Umpleby was born in Graysville, Ohio, in 1883. He received his elementary education in the grammar schools of California, and later he attended Ohio Wesleyan University, the University of Washington, and the University of Chicago, where in 1910 he received the degree of doctor of philosophy, *magna cum laude*. He became a member of the United States Geological Survey in 1907 and has been engaged principally in the examination of mining districts.

Dr. Umpleby has reported on the Republic and Oroville-Nighthawk districts of Washington for the state geological survey. His work on the Federal survey has included a season as assistant to Dr. F. L. Ransome in the detailed investigation of the Ray and Miami districts, Arizona, one summer in the Judith Basin coal field, Montana, and another in examining certain coal deposits of the Cascade Mountains. Since 1910 he has been engaged in a study of the mining districts of Idaho, in preparation for a comprehensive report on the ore deposits of the State. As this State is unique among the Western States, in that it embraces within itself a com-

bined physiographic, petrographic, and orographic province, it is probable that these studies will lead to conclusions of more than ordinary interest. \*Dr. Umpleby has already published a number of official reports on the ore deposits of parts of Idaho and has contributed several articles to technical journals. Among these the most important is his discussion of the genesis of the Mackay copper deposits, as these deposits are rather exceptional in admitting of almost rigorous proof that they were formed by magmatic emanations.

Dr. Umpleby served two years as geologist on the Geological Survey of Washington, and for one year (1915-1916) while on leave from the Federal survey was acting associate professor of geology in the University of California. He is a member of several geological societies and of the American Institute of Mining Engineers.

## BUREAU OF MINES LISTS ITS LATEST PUBLICATIONS

Announcement that the following publications are ready for distribution has been made by the Bureau of Mines:

Bulletin 122. The principles and practice of sampling metallic metallurgical materials, with special reference to the sampling of copper bullion, by Edward Keller. 1916. 102 pp., 13 pls., 31 figs.

Bulletin 128. Refining and utilization of Georgia kaolins, by Ira E. Sproat. 1916. 59 pp., 5 pls., 11 figs.

Technical Paper 137. Combustion in the fuel bed of hand-fired furnaces, by Henry Kreisinger, F. K. Ovitz, and C. E. Augustine. 1916. 76 pp., 2 pls., 21 figs.

Technical Paper 138. Suggested safety rules for installing and using electrical equipment in bituminous coal mines, by H. H. Clark and C. M. Means. 1916. 29 pp.

Technical Paper 164. Accidents at metallurgical works in the United States during the calendar year 1915, compiled by A. H. Fay. 1916. 20 pp.

Miners' Circular 23. Elementary first aid for the miner, by W. A. Lynott and D. Harrington. 1916. 23 pp., 19 figs.

Note.—Only a limited supply of these publications is available for free distribution, and applicants are asked to cooperate in insuring an equitable distribution by selecting publications that are of especial interest. Requests for all papers cannot be granted. Publications should be ordered by number and title. Applications should be addressed to the Director of the Bureau of Mines, Washington, D. C.

### To Study Rochester District

Adolph Knopf, of the United States Geological Survey, left last month for the Rochester district of Nevada, where he will make a detailed geological survey of the more centrally located portion of that mining district. He will be engaged three months on this work.



### DRAFT OF NEW MINING CODE WANTED BY SEPT. 1

If prompt action is obtained on the bill to revise the mining laws at the next session of Congress it will be necessary to have the bill ready by September 1, Representative Taylor, of Colorado, believes. He also points out that the senators and representatives of the mining States must have a draft of the bill in time to submit it to some of their constituents so as to secure their opinion on it before returning to Washington. To insure the study of the bill by a considerable number of persons in each of the mining districts it will be necessary, Mr. Taylor believes, to have not less than three months time for this to be done.

Mr. Taylor has been advocating a revision of the mining laws for a number of years. It is his personal opinion that a commission should visit every mining region of the country, so as to secure a better idea of the needs of all mining districts before attempting any drastic change in the present law. Since the commission idea has met with decided opposition in Congress, Representative Taylor is not averse to the plan of having a bill formulated by Van H. Manning, of the Bureau of Mines, in conjunction with W. R. Ingalls, L. D. Ricketts, J. R. Finlay, J. Parke Channing, Hennen Jennings and John Hays Hammond and Walter Douglas. He has a high opinion of the ability of these men, but sounds a note of caution in suggesting that the greatest care must be used not to allow theoretical conditions to govern their action to too great an extent. He declares the man with the burro must be considered. He also hopes that it will be possible to remedy the glaring defects in the mining code without tearing up the entire statute. He believes the changes should be held to a minimum.

### SUPERIOR MILLING METHODS ACCOMPLISH WONDERS AT TYRONE

Sidney Paige, who is in charge of western areal geology for the Geological Survey, sees in the Tyrone district of New Mexico an example of what can be accomplished on low-grade secondarily enriched chalcocite deposits by underground mining. A few years ago it would have seemed impossible that conditions ever would exist which would permit of such extensive operations in such low-grade ore. Superior milling methods and the increase in price have been mainly responsible for the great success of mining operations in the Tyrone district. Mr. Paige thinks it possible that the physiographic history of the region may throw light on the several periods of enrichment. These aspects of geology which might appear to be purely scientific may prove of direct economic value, he points out.

The Union Zinc Co., Knoxville, Tenn., are enlarging their mill and have just given the Denver Quartz Mill & Crusher Co. a hurry-up order for a Denver Quartz mill.

### SURVEY MEETS DEMAND FOR DETAILED COAL STATEMENT

In the Geological Survey's monthly coal statement, which is about to follow, it will be noticed that more detail is shown than has been the case previously. Beginning with this statement the Survey will attempt to meet as completely as possible the demand for more detailed information in this regard. The groupings are arbitrary as the Survey must depend for its information upon the railroads. On the Baltimore & Ohio Railroad, for instance, coal is originated in several States, which makes it necessary to show all of these States in the same group. The statement is as follows:

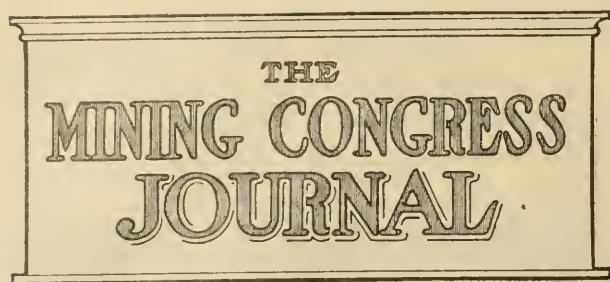
Carloads of bituminous coal that originated on fifty three railroads and of beehive coke on eleven roads in January, 1917, as compiled from reports received by the Geological Survey, Department of the Interior, by noon, February 15, 1917:

|                                                              | January<br>1917 | December<br>1916 | January<br>1916 |
|--------------------------------------------------------------|-----------------|------------------|-----------------|
| Number of working days.....                                  | 26              | 25               | 25              |
| Carloads of bituminous coal, Pennsylvania (15 roads).....    | 188,161         | 173,914          | 204,417         |
| West Virginia, Virginia, Maryland, and Ohio (11 roads).....  | 200,560         | 188,751          | 190,440         |
| Illinois and Indiana (13 roads).....                         | 143,475         | 128,891          | 137,327         |
| Kentucky and Alabama (6 roads) ..                            | 18,930          | 17,152           | 15,471          |
| Iowa, Texas, Colorado and Southwestern States (8 roads)..... | 22,590          | 20,197           | 19,900          |
| Fifty-three roads...                                         | 573,716         | 528,905          | 567,555         |
| Carloads of beehive coke (11 roads) ..                       | 64,669          | 62,952           | 69,902          |

The increase in shipments of bituminous coal in January, 1917, compared with December, 1916, was 8.5 per cent, and compared with January, 1916, was 1.1 per cent. The average number of cars of coal per working day was 22,062 in January, 1917, against 21,152 in December, 1916, and 22,701 cars in January, 1916. These statistics indicate that although shipments in January, 1917, were greater than in December, 1916, in all the five States or groups of States, and were greater than in January, 1916, in all the groups shown except Pennsylvania, the average daily rate of production is now less than a year ago, but is above that for December, 1916, which in turn was below that for November, 1916.

The shipments of beehive coke in January, 1917, showed an increase of 2.7 per cent compared with December, 1916, and a decrease of 8 per cent compared with January, 1916.





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MARCH, 1917

### **TAXES SCARE CAPITAL AWAY FROM COLOMBIA**

Conditions in Colombia are such as to be very discouraging to the American oil and mining men, according to G. S. Rogers of the United Geological Survey, who has just returned from a five-months visit to the South American republic.

"The whole atmosphere in Colombia," declares Mr. Rogers, "is discouraging to development. There is a general tendency to tax industry. In most cases the amount of taxation is out of proportion with the chances of profitable exploitation of resources, especially when their extent is unknown. While there are many seepages of oil, it is known that the anticlines are badly shattered in many cases and some authorities doubt if development will bring in any important supplies of petroleum."

It seems to be the almost unanimous opinion of engineers returning from Colombia that it is very poor place for American capital to look for investment. The public there seems to look upon Americans as legitimate objects of all manner of extortions. There is a tendency among the lawmakers of the country to regard foreign enterprises as the best source of revenue. Transportation facilities are very poor and there is little tendency on the part of the government to develop these facilities for its own account.

While it is known that the mineral resources of the country are of sufficient importance to justify development under fair conditions, the general conclusion seems to be that there must be a revolutionary change of public sentiment in Colombia before American investments can be recommended.

### **DIVISION OF MILITARY SURVEYS TO AID WAR DEPARTMENT**

An important development connected with the topographic work of the Geological Survey is the larger use now made of the published maps. The increasing number of map users is bringing new demands upon the Topographic Branch, the most important of which is that of having the topographic surveys meet the special requirements of the army. Within the last year or two, cooperation between the War Department and the Geological Survey has been more active than ever before, and further progress in this cooperation will be promoted by definite recognition in the Survey organization of this phase of topographic work.

Glenn S. Smith is credited with much that already has been accomplished, and will be in charge of the Division of Military Surveys created last month. This division is of co-ordinate rank with the five geographic divisions, but the chief of the new division will cooperate in a special way with each of the other division chiefs. In whatever degree the topographic survey of any area is intended to meet the needs of the War Department, the field and office work will be administered directly by the chief of the division under which that area comes geographically, but the supervision of the technical work in so far as it is planned to meet military requirements will be under the chief of the division of military surveys.

It is believed that this division of responsibility is definite enough to continue the present plan of efficient administration and also to provide for the specialization necessary in much of the mapping planned and indeed already in progress. The special map data desired by the War Department will thus be collected under one plan and by the same methods for certain areas, whether on the Atlantic or Pacific coast, but without affecting the general administration of the work within any division.

### **GEOLOGISTS GOOD MATERIAL FOR OFFICERS' RESERVE CORPS**

Following the action of most of the topographers in the Geological Survey in joining the Officers' Reserve Corps of the Army, the geologists are contemplating a similar step. While some are of the opinion that the geologists will not be able to be of the same service to the Army as the topographers will be able to render, it is certain that they will make good material for officers in the Reserve Corps. In the first place they have received scientific college training. They have had experience in field work and are accustomed to camp life. They have a general knowledge of physiography and conditions controlling the supply of underground water and drainage. They have an intimate knowledge of extensive regions throughout the country in which they have worked. These reasons, in addition to the fact that most geologists are splendid physical specimens, will make them very valuable adjuncts to the engineer force in case of war.



### **JANUARY COAL TONNAGE EXCEEDS PREVIOUS RECORDS**

A greater tonnage of coal was mined during January than in any single month in the history of the industry, it is believed at the Geological Survey. January of 1916 so greatly exceeded the record of any previous month and its phenomenal production so exceeded what would have been thought possible even a year before, as to have led to the conclusion that a similar production would not take place soon. That the remarkable production of a year ago should be duplicated again this year has caused unusual comment.

The production in January would have been much greater if it had not been for railway congestion. The congestion was so great in Pennsylvania as to result in an actual decrease as compared with the figures of last year.

### **DYNAMITE MAY BE MADE GREAT SAVER OF LABOR**

By J. B. STONEKING, M. E.

Contractors and engineers generally are feeling the acute labor shortage, especially of the cheaper labor which is used quite extensively in excavation work, such as building foundations, basements, cellars, water storage reservoirs, trenching, and cuts in street, road and railroad construction. The number of newly arrived immigrants from which the supply for this class of labor was largely drawn has been very materially affected by the European War. This same cause is largely responsible for the demand for skilled labor like machinists and iron and steel workers, and the interest shown by manufacturers in drawing upon and training the unskilled men to fill their needs. Also, the increased wages paid to skilled workers has caused a general feeling of unrest in labor circles, which, coupled with the constantly increasing cost of living, and the insupportable supply of ordinary labor, has caused the demand and the necessity for higher wages.

In general excavation work, labor forms a very important part and one of the most variable items of cost entering into the contractors' or engineers' estimates on a "job." Hence, they are looking for and quickly seize upon any good method of saving labor, frequently developing or adapting ways and means to their needs which have been very successful in keeping down cost and enabling them to "break even" on their bids.

Probably, the chiefest of these is the development and use of the lower grades of dynamite, which is rapidly finding favor among men in this line of work. In rock, the efficiency and necessity of using dynamite has

long been recognized, but when this high grade explosive was used in earth excavation work, the results were far from being satisfactory. This is due to the character of the material being worked, rock work requiring a quick-acting, shattering force to give results, while in earth a comparatively slower-acting and heaving or lifting effect is desired. Recognizing the necessity for an explosive of this kind, the manufacturers have worked out a low-grade, slow-acting, heaving, comparatively insensitive and safe to handle, low-freezing dynamite which contractors have been quick to adopt in their search for an efficient means of cutting down labor costs. It is used in conjunction and in combination with all types of mechanical excavators to hasten, aid, and cheapen the work. In this connection the method generally pursued is to do the drilling or punching of the bore holes, and the firing at a time when it will not interfere with the other operations.

On large projects, even where the steam shovel is used, it is generally necessary to loosen the material by blasting ahead of the shovel where large imbedded boulders, compacted earth, or hardpan are encountered. In order to secure the maximum efficiency of the machine, the shovel must be filled at every trip, hence it is not advisable to make the shovel do very much digging in hard material to fill it, as the yardage handled will be too low for any profit. Often the use of a little dynamite on large boulders, old water mains, large roots, stumps, and other obstructions will save a broken cable and consequent delays. On work such as excavations for bridge piers in dry ground, and foundations for large columns and statues which are comparatively deep and of small area, good results can frequently be obtained by loosening up the bottom with blasts and removing by means of a clam shell or orange peel bucket rig.

For smaller operations or on those which, by their nature, do not permit of the use of the more expensive large machinery, and which depend more on some sort of plowing to loosen the material, the amount of hand labor required is greater and hence more necessary for the use of labor savers. In shallow excavations where the material is not too hard to plow successfully and where ample room may be had in which to turn, the horse or tractor drawn elevator grader gives good results. The use of the wheeled scraper buck scraper, slip, and "Fresno" scrapers are limited to very soft material, hence plowing to loosen same is essential. In hard ground, or where there are boulders, roots, stumps, or hardpan, plowing becomes very unsatisfactory and costly, and sometimes, impossible. By the proper use of dynamite the plowing may be dispensed with entirely at a considerable saving, and, even in easily plowed ground where it is desired to leave the banks and corners of the excavation perpendicular, a great amount of hand picking and shoveling may be saved by blasting out the corners and sloping toes.



Where the work is very small or the areas too restricted for the use of teams in plowing, the question of hand labor is a very serious one. The pick or mattox and the shovel form the principal tools. At best, this method is a very slow and costly operation, and if any other possible way can be used successfully, it is generally wise to adopt it. Low-grade dynamite is the salvation of the contractor in this case, and its successful and rational use has been the turning point from loss to profit.

If possible to put it off, excavation work should not be done while the ground is frozen, for the costs are considerably increased, however, in some cases, the work must be prosecuted vigorously regardless of weather conditions, and in working "frost" the most efficient labor-savor is the low-freezing dynamite. Care should be taken not to blast too far ahead of the shovel and scrapers or the material may consolidate again.

#### **FIND FACTORS WHICH HAD INTERFERED WITH FLOTATION**

In metallurgical research work being carried on at the Utah station, under the direction of O. C. Ralston, the results of particular value during December were the determining of the interfering factors which had caused trouble in sulphidizing and flotation of certain lead carbonate ores. Some of these ores could be concentrated successfully by this method of treatment, while others did not seem to yield. The interfering metals identified were the oxides of manganese and the insoluble basis sulphates of iron, such as Utahite, jarasite, etc. The mineralogical analysis of oxide ores is difficult, and Dr. Laney spent considerable time in determining the above facts. These metals consume the sodium sulphide used in sulphidizing, and methods of removing them or rendering them harmless will be worked out.

#### **EFFECT OF SAFETY SERVICE NOT APPARENT IMMEDIATELY**

"The average safety condition of the bituminous coal mines in Pennsylvania on Jan. 1, 1916, was 75 per cent perfect on the standard scale of measurement adopted. The average safety condition of the same mines on July 1, 1916, only six months later, was 92 per cent perfect. This condition corresponds with an improvement of from 25 per cent below standards to 8 per cent below standard, and represents a condition of safety which should correspond with a reduction of fatalities from a little over 3 per thousand to one-third this number, or something over 1 per thousand. It is rash to predict that the statistics of accidents in the mines affected by this inspection and safety service will be reflected in the statistics for this year or next. It is, however,

reasonable to believe that such a result will be effected within the next three or four years, providing as good relative progress in the improvement of the condition of the mines is made during the next few years as during the past few months." (Extract from address made by H. M. Wilson.)

#### **ADDITIONAL STUDY IS TO BE MADE OF SAGE BRUSH OIL**

Sufficient merit has been shown in the use of sage brush oil as a flotation agent to convince the Bureau of Mines that additional research may profitably be undertaken in the study of the properties of this oil. Work along this line has been conducted for some time at the Salt Lake City station of the Bureau of Mines. Dorsey Lyon, who recently has gone from the Salt Lake City station to Seattle to take charge of the new mine experiment station there, has been instructed to give sage brush oil particular attention. He is cooperating with Prof. G. H. Clevenger, the consulting metallurgist of the Bureau who is stationed at Palo Alto, Cal. That the sage brush oil problem is being considered very seriously by the Bureau of Mines is indicated by the fact that Van H. Manning, the director, and F. G. Cottrell, the chief metallurgist, have been giving the matter personal attention recently.

#### **EDMUND I. LEAVER ADDED TO TUCSON STATION STAFF**

Edmund S. Leaver has been selected as the assistant metallurgist at the Tucson mining experiment station. He attended the University of Utah from 1889 to 1894. From 1894 to 1897 he was employed as a metallurgist at Mercur, Utah. From 1897 to 1903 he was with Charles Butters & Company, Inc. During a portion of that time he was in charge of the San Sebastian mine of that company which is being developed in the republic of Salvador. Mr. Leaver was superintendent of the Dexter-Tuscarona Mining Company from 1904 to 1906. He was general superintendent of the Nevada-Goldfield Reduction Company from 1906 to 1909. In 1910 he was the manager of the Daisy Combination Mining Company and in addition did private research work. During 1914 and 1915, Mr. Leaver was superintendent of the Knight-Christensen Metallurgical Company at Silver City, Utah. At the time of his appointment he was engaged with the Tintic Milling Company. His salary will be \$2,700. He reported for duty February 1.

#### **Erect Mill in Nevada.**

The Antimony and Silver Mines Company, of Salt Lake City, are erecting a mill on their property near Battle Mountain, Nevada. The grinding equipment has been ordered from The Denver Quartz Mill & Crusher Company, Denver, Colo.



# NEW ARMOR-PLATE PLANT LIKELY TO GO TO WEST VIRGINIA, INDICATIONS POINT

Combination of Advantages in that State Expected to Outweigh those of Others—  
Coal Supply, Distance from Seaboard and Proximity to  
Iron Ore Are Points in State's Favor

That West Virginia will be the site of the Government armor-plate plant is believed by many persons who are in touch with this situation in Washington. A large number of cities in various sections of the country are working actively to secure this plant. Several southern points have been particularly active in their campaigns. The naval board, which has this matter in charge, is required to exclude from consideration all territory within 200 miles of the seaboard or the boundary line with another country. This makes it necessary for the plant to be located at some point between the Appalachian and Rocky Mountains. Since the difficulties of transporting armor plate are great, it would be prohibitive to have the plant located at a great distance in the interior and for this reason it is regarded as certain that the territory west of the Mississippi is eliminated. The same objection applies practically to most points in the Middle West.

The South seems to have been excluded by a blanket order against iron ores which are high in phosphorous. Practically all southern ores have a high phosphorous content. A few exceptions are deposits which have not been worked extensively and where the quantity of ore available has not been established.

The most effective argument which has been made in favor of West Virginia is the fact that it would be possible to build a plant where the best possible grade of coal for this purpose is immediately at hand. Since it would be cheaper to transport pig iron than it would be to transport coal for fuel, all probabilities seem to point to the selection of the site near the coal supply rather than at the point where the pig iron is made. Charleston or Huntington, W. Va. are without the 200 mile coastal zone but still would be sufficiently close to the seaboard that the finished product could be transported without great difficulty. Either site is located in a region which lends itself to defense and at the same time is not far from large supplies of the requisite grade of pig iron.

Admiral Fletcher, the head of the board, has announced an itinerary which provides for visits of the board to the principal points which have made application for the armor plate plant. After this trip, and due to the increased pressure for the commencement of the plant, it is probable that a decision in the matter will not be delayed long after the return of the board.

The Geological Survey and the Bureau of Mines have been able to furnish a great deal of valuable information with regard to iron and coal deposits of the country to the board.

## SAFETY STANDARDS RECEIVE APPROVAL IN 3 STATES

"As evidencing the attitude of the State Industrial Boards and the State Insurance Departments toward the system of insurance and schedule rating inspection by the Associated companies, it is necessary to point only to the cordial relationship established in the three coal mining States in which the law provides for compulsory workmen's compensation, coupled with a fair attitude toward an encouragement of private insurance for the obligation, viz., the States of Pennsylvania, Kentucky and Colorado. In all three States the technical value of the safety standards and the system of inspection and schedule rating the various hazards within the mine has received official approval, and has been adopted for all insurance carriers in those States. In the States of Pennsylvania and Kentucky, the Department of Inspection and Safety of the associated companies has been authorized to act as a Central Inspection and Schedule Rating Bureau for all insurance carriers of coal mine risks, with the result that in those two States over 90 per cent of the mines are insured either with the associated companies or the state fund, and are under the inspection and safety service of the associated companies, and that, in consequence, vast sums have been expended in the improving of safety conditions in the mines of those states." (Extract from address made by H. M. Wilson.)

## STUDY MATERIALS ENTERING INTO NEW INTERIOR BUILDING

Classified information as to the various structural materials entering into the construction of the new Interior Department Buildings is being compiled by the Division of Mineral Resources of the Geological Survey. It is probable that this data will form the basis of a chapter in Mineral Resources for 1916. Dr. George Otis Smith, director of the U. S. Geological Survey, chairman of the building committee, together with E. F. Burchard, in charge of the structural materials and iron work of the Bureau, are compiling some very interesting statistics with regard to the constructional materials which are going into the new home of the Geological Survey and other bureaus of the Interior Department. By taking this modern building as an example much interesting and useful information, which will apply to all building operations, will be derived, it is believed.



# MINE OPERATORS EXPRESS THEIR VIEWS WITH REGARD TO THE LABOR SITUATION

## Prominent Members of the American Mining Congress Comment on This Important Feature of the Industry—Colorado Statute and Canadian Disputes Act Commended

During the past month a large number of letters have been received by the American Mining Congress with reference to the labor situation. The letters refer largely to the editorial stand taken in this matter in The Journal. The letters form a remarkable compilation of the best current thought on this important subject. Among the letters received on this subject are the following:

Bisbee, Ariz., Jan. 24, 1917.

I am not informed as to the substance of the so-called Colorado law with regard to the settlement of industrial disputes, but am familiar in a general way with the Canadian act. I note that on your recent visit to Colorado you found that the operation of this Colorado law had been eminently satisfactory to all but the officials of organized labor. As you have had the opportunity to investigate the matter personally, and as I have great confidence in your practical judgment, I may assume that the legislation referred to has been beneficial to the industry and, if so, I believe it to be the province of the MINING CONGRESS JOURNAL to advocate its extension and even its Federalization. I have read the editorial on the compulsory investigation of industrial disputes and I feel that while this is rather in the nature of radical legislation, in cases where the public is affected detrimentally by a strike or lockout, it is the only solution which can be thought of at the present time for the condition.

As president and director, therefore, I heartily approve of the proposed campaign of the Congress and believe that it would be well to print in the next number of the Journal the text of the Colorado law and handle, editorially, an indorsement thereof and a statement of its results to the present time.

(Signed) WALTER DOUGLAS.

Kenosha, Wis., Feb. 13, 1917.

With reference to the labor situation and the attitude of Congress toward the enactment of a law along the line of the Canadian Industrial Disputes Investigation Act, I will say that I am heartily in favor of such a law, because I believe that the present method used by labor—calling a strike whenever they feel like it, and in numerous cases even without having any of the differences discussed—is a menace to the prosperity of this country.

This state of affairs not only is a menace

to the prosperity of capital, but it is also a menace to the prosperity of labor, and, in fact, every person living here.

The attitude taken by your journal in the editorials on this subject meets with my hearty approval, and I hope that you will keep it up until the laws as described by you are enacted not only by Congress but by the legislature of every State in the Union.

The recent strike of coal teamsters in Chicago is a good illustration of what labor unions will do in the way of declaring strikes without even discussing their so-called grievances.

You are probably aware of the fact that this strike was called without notice, and the president of the union could not be found for an entire day, while the city of Chicago faced a fuel famine.

It will never be known how many children and invalids not only suffered, but died, on account of this inexcusable action on the part of coal teamsters.

(Signed) GEO. S. WHYTE.

Pittsburgh, Pa., January 23, 1917.

It is my judgment that inasmuch as we already have the Adamson Law, and which in all probability will be decided by the Supreme Court as constitutional, we should follow up the proposition and have the balance of the programme enacted, namely, compulsory arbitration.

If it should happen that the Supreme Court should declare this unconstitutional, then, I think, it would be well enough to drop the entire matter, although I am of the opinion that an act patterned after the Colorado Act, as you discussed in the January issue of the Journal, would be a very good thing, especially as it has to do particularly with the public.

(Signed) S. A. TAYLOR.

Duluth, January 24, 1917.

I wish to state that I am in hearty accord with the views of the Mining Congress on "Compulsory Investigation of Industrial Disputes," and you can count me as being with you in this matter, and I hope the Mining Congress will do all in its power to help bring about this condition. It is the only fair and just way to settle industrial disputes.

I have talked with a number of men of prominence here and they all feel as I do regarding this matter.

(Signed) GEO. H. CROSBY.

Charlottesville, Va., Feb. 9, 1917.

I agree with you very fully that the American Mining Congress should undertake a serious campaign to get the Congress of the United States to enact a law along the lines of the Canadian Industrial Disputes Investigation Act:

(Signed) J. S. GRASTY.

Carbon, W. Va., Feb. 13, 1917.

I heartily agree that the American Mining Congress should undertake a serious campaign to have a Federal law enacted along the lines of the Canadian Industrial Disputes Investigation Act, which makes a strike or lockout illegal until time has been given for an investigation by some appointed authority.

I also feel that both employer and employe should use their influence in their respective states to have a state law enacted similar to the Colorado law. In my humble opinion, if such could be brought about, it would truly be a blessing to both employer and employe, for it would take both out of the hands of the professional politician and professional labor leaders.

(Signed) C. A. CABELL.

Salt Lake City, Feb. 13, 1917.

I have noted with interest your editorials regarding enactment of a law patterned after the Canadian act making a strike or lockout illegal until time has been given for an investigation.

I very heartily indorse them.

I am taking the matter up with Mr. MacKenzie, the secretary of the local chapter, and he will no doubt communicate with you at length after looking into it so far as Utah is concerned.

(Signed) IMER PETT.

Janesville, Wis., Feb. 14, 1917.

I have read the two editorials on page 48 of the February Journal. The general sentiment expressed in these two editorials has my hearty approval. I was especially impressed with the fine position taken by the Governor of Colorado.

I remember to have read with strong disapproval what Mr. Gompers was reported to have said at the time the papers gave out his utterance. If that be the attitude of a substantial number of our citizens, the stability of the government is in peril. The labor organizations are constantly asking for legislation, and always to promote their own interests. They talk freely about legislation of which they approve and of which they disapprove. It is not reassuring thus to hear their great leader define what he will do if legislation be enacted that does not suit him. He must understand that government cannot be conducted on any such basis. We want labor to have wise legislation, because it is just that they have such legislation. We cannot concede to labor leaders the exclusive right to pass judgment upon what legislation is wise and to

be obeyed, and what is unwise and to be defied. There are certain elements of substantial justice which everybody recognizes, and if these elements are present, the laws that contain them must be obeyed.

As to the main point of your inquiry—the restraint upon the right to strike, pending an investigation, especially when the rights of the public are seriously involved—there ought not to be any question. In the production of coal and in the operation of railroads and other public utilities too much inconvenience and danger to the public is involved to tolerate a strike or a lockout without first having a public investigation. This is not enforcing involuntary arbitration, a method of settling disputes which I am not inclined to favor, but it secures an opportunity for the public to protect itself against high-handed procedure on the part of either party to any such controversy. If the public impose this restraint, the public will see to it that it is observed, and that justice is done speedily and fearlessly. Labor has no right to ask for anything more than justice, and if the public insist upon this right of prior investigation, neither labor leaders nor employers will be permitted arbitrarily to involve the health and public welfare of the whole community in the vicissitudes of a strike or a lockout until such investigation shall first have been made as will enable the public to form a correct judgment with respect to the merits of any controversy between employer and employe which vitally affects the public welfare.

(Signed) JOHN M. WHITEHEAD.

Columbus, Ohio, Feb. 15, 1917.

This is to state in the most emphatic manner that I favor the enactment of any law which will even have a tendency to eliminate strikes from our industrial life.

One of the great troubles of the lawmakers of the country, both State and Federal, is that they are apt to go from one extreme to the other and give little attention to the effect of the legislation which they contemplate enacting into law.

If the members of Congress would take a firm stand in defense of the principle and pay less attention to their political ambition, they would more quickly win and retain the respect of all right-thinking Americans.

In regard to law mentioned in your communication, the weakness of the proposed legislation is the fact that there is no limit placed upon the time in which an investigation should be made and a report given to the public.

I happen to know of investigations made, and by the authority of the Department of Labor at Washington. The investigation was made by representatives designated as labor mediators or conciliators, and because the findings of those investigators were adverse to the policy of the leaders of certain labor unions involved in strikes, the findings of the government investigators were not made public, but were suppressed.



You can readily understand the effect of such a report being made, either during a strike or previous to a prospective strike taking place. This is why certain labor leaders prefer there shall be no legislation which might turn the searchlight on their conduct and their policy.

I have always believed that the labor leaders or employers of labor who are afraid to permit their business to stand for public investigation, that they have no right to expect any consideration from the American people.

(Signed) T. L. LEWIS.

Washington, D. C., February 8, 1917.

I have looked over the Mining Congress Journal and much appreciate all that you have brought forth in regard to the labor situation. Your views are most sound. This labor question is the greatest in the country and requires both sympathetic and fearless treatment. Both labor and capital should be brought closer together and their limitations and dependability upon each other discussed in a far different tone than is being at present employed.

If we do not wish finally to face a situation of internal war and which if it does take place must be more disastrous to the many than the few. The income tax return shows the small distribution of any great wealth, not over one-third of one per cent of the population. And thus, should a railroad strike be brought about, would not the poor and the children of the poor be the greatest and chief sufferers?

I am not prepared at the present time to write an article for you on the subject of the labor problem but I have it much in mind and at some future date I trust to be able to bring it forth in the form of showing the relative relationship and accomplishment of invention, mining, labor and capital.

(Signed) HENNEN JENNINGS.

Denver, Colorado, January 25, 1917.

With regard to the American Mining Congress going on record as favoring compulsory investigation of industrial disputes, from my own view-point and from a more or less casual examination of the workings of the law, it appears to me that such a law takes out of the hands of the agitator the club that he has held over the heads of employers. It gives the men an opportunity of having the difficulties presented to them by disinterested parties and also gives employers of labor opportunities to present their cases to an impartial board, and I think that in a great majority of cases employers of labor can expect to get justice just as often as the employees themselves.

I do not see any reason why the American Mining Congress should not go on record on this subject, as I think a federal law of this

type would eventually work a great benefit to employe as well as employer.

(Signed) IRVING T. SNYDER.

Chicago, Feb. 7, 1917.

I am fully in accord with the verbiage of your editorials in the February Journal, which came to my hand today. I always believe in frankness of expression, and I feel that you make more friends by stating your views in plain language than to mean one thing and say the other.

From my viewpoint, the labor situation of this country is the greatest problem to be solved, and, as I have often said, I believe that war with a foreign nation is much more remote than are our troubles at home. If you will read the Mine Workers' Journal, or other publications gotten out by the labor unions, you will certainly find that they are not at all backward in expressing their views, and very frequently twisting facts. Therefore, it seems to me to be an absolute necessity to set forth our side in a dignified manner, placing the blame where it belongs, because even though someone may be offended for the time being, no sensible man can object to the telling of the truth.

My views on the advisability of working for the passage of an industrial investigation act along the lines of the Canadian act, after which the Colorado law was patterned, are that I strongly concur with this movement and think the Mining Congress should use every effort in that direction.

You may have read in the Chicago papers of the strike of coal teamsters, at a time when the city suffered the greatest possible coal famine, and if such a law had been enacted this strike would have been impossible. It is on this account that Mr. Gompers and his associates do not wish such legislation passed, but I think it is up to us to urge it in the strongest possible manner.

(Signed) CARL SCHOLZ.

Houghton, Mich., February 15, 1917.

My personal opinion is strongly in favor of both State and Federal laws along the line of the Canadian Industrial Disputes Investigating Act. I believe such laws will be of great benefit to labor and to the public in general.

(Signed) F. W. McNAIR.

Provo, Utah, February 13, 1917.

My views relative to the Industrial Disputes Investigation Act, which makes a strike or lockout illegal until time has been given for an investigation by some appointed authority, are that I certainly approve of such a law being passed as I consider it unfair and unjust to any corporation who has given steady employment to men to have to meet a strike condition without any notice whatsoever, as in all such cases it would cause great loss to the employer as well as the general public.

(Signed) J. WM. KNIGHT.

Joplin, February, 15, 1917.

I have read with interest, and it gives me pleasure to say that I have carefully read your editorials relative to the Industrial Disputes Act, and I am heartily in favor of the attitude taken. I have occasion also to know that some of my Colorado associates are unanimously in favor of the law and I sincerely hope that the Mining Congress will make an energetic effort towards the enactment of a Federal law and that the various States may also be brought into line in this regard.

(Signed) A. J. BURNHAM.

Chicago, Feb. 9, 1917.

I am heartily in accord with the work you have undertaken in connection with a General Industrial Disputes Investigation Act, as outlined in editorials in the last issue of the Mining Congress Journal. I should be glad to be of active service in this line if I can further the matter.

(Signed) W. T. DEAN.

Mauch Chunk, Pa., Feb. 15, 1917.

I note the strong effort you are making toward the enactment of the Industrial Investigation Act, along the lines of the Canadian act, after which the Colorado law was patterned. I think it would be a good thing for the American Mining Congress to support this measure fully and do everything in their power, and go upon record on this subject.

(Signed) M. S. KEMMERER.

Minneapolis, Minn., Feb. 10, 1917.

We are years behind Canada in properly safeguarding both labor and capital from unnecessary and destructive warfare, so frequently brought about by industrial conditions. I am not familiar with the Colorado law, but agree with you heartily that every State should have a law that would make it illegal for a strike or lockout to occur until proper investigation should be had. Of course, the labor leaders will object to this, as their business is largely trouble-making. The American Mining Congress cannot make itself of greater value than to take up this important question and see that it is solved to the advantage of all parties. The walking delegate is as much a curse to labor as he is to capital.

You have my hearty co-operation, and I hope by the next meeting of the Congress a report can be made showing that substantial gain has been made along this line.

(Signed) JOHN E. HODGE.

Philadelphia, Pa., Feb. 9, 1917.

We have reaped considerable benefits from the Colorado law being on the statute books of the State of Colorado. Consequently, I heartily indorse the movement you have

undertaken to use your best efforts in having a similar law on the statute books of every State in the Union.

If there is any manner in which the writer can assist you in this direction, he shall be very glad to render you his hearty cooperation.

(Signed) WM. WRIGHT.

Chicago, Feb. 9, 1917.

Relative to the attitude of the Journal in advocating an industrial act similar to the Canadian Industrial Disputes Investigation Act, there is no doubt the coal operators of Illinois are very much in favor of legislation of this character, and I am sure are pleased with the attitude you are taking editorially. At the Chicago hearing of the Federal Commission a couple of years ago, I explained the provisions of the Canadian act and urged favorable consideration by the commission.

(Signed) E. T. BENT.

Terre Haute, Ind., Feb. 10, 1917.

I have heard of the law in use in Canada and from what I have heard of it, I have been led to believe that it would be a good thing, but as I have never seen a copy of this law I would not like to say definitely. However, since you tell me that practically the same law is in effect in Colorado, I would like very much to have a copy of this law as soon as you could possibly get it to me, and if it is as I understand it is, I might take some steps to have it introduced in Indiana, as I am at this time a member of the Indiana State Senate, and anything that would avoid the great waste that strikes and lockout bring about, I surely would favor, if it is drawn up along the proper lines. While I have heard many favorable comments on the law referred to, I have never seen a copy of it and would like very much to have a copy of it, as I believe as a general proposition that strikes should be made so hard to bring about that it would be almost impossible to have one, at least, not until all parties have had a chance to be thoroughly investigated as to their rights in the matter, and especially so when the public, who are the innocent parties, are to be the principal sufferers.

(Signed) J. C. KOLSEM.

Columbus, Ohio, Feb. 12, 1917.

We are members of the Ohio Manufacturers' Association, which is in favor of a law of this kind.

(Signed) S. B. BELDEN.

Cleveland, Ohio, Feb. 9, 1917.

Referring to the enactment of a law along the lines of the Canadian Industrial Disputes Investigation Act, I wish to advise that my



personal opinion is that this law would be of great benefit to the industries of the United States.

(Signed) F. ARMSTRONG.

Denver, Col., Feb. 14, 1917.

We are decidedly in favor of the law you mention and hope that all of the States may pass it, as well as the Federal Government. It is a great benefit to both the employer and employe, and the only trouble in our State is that they have threatened to test its constitutionality, so that should be looked into pretty thoroughly before the bills are introduced.

(Signed) E. B. HENDRIE.

Colorado Springs, Col., Feb. 15, 1917.

Referring to the Industrial Commission Law which has been on the statute books of this State for the past two years, I will say that the law, so far as I know, is generally satisfactory to operators everywhere. An effort is being made by labor leaders to secure its repeal. We believe the law to be perfectly fair and just, and would be in favor of a federal law along the same lines. We are glad to note that you are taking an active interest in furthering this end.

(Signed) THOS F. BURNS.

Golden, Col., Feb. 14, 1917.

Concerning the Colorado law which makes a strike or lockout illegal until time has been allowed for investigation by some appointed authority, I believe nearly everyone in this country is in favor of any method which will tend to protect the rights of the general public, as well as those of the particular parties involved in labor troubles. The Colorado law certainly tends in this direction, and at the same time does not infringe too greatly on the rights of those involved in a dispute. Often a little delay in the calling of a strike or lockout will give an opportunity for the interested parties to get together, and I am, therefore, personally strongly in favor of the general principles of the Colorado law as enacted.

(Signed) R. B. MOORE.

Cleveland, Ohio, Feb. 13, 1917.

There is without any doubt no more important subject before the American people than the one of which you speak, and the American Mining Congress should do everything possible to help along this line, and we are very glad that you are taking such an active part in this matter.

(Signed) C. O. BARTLETT.

Kansas City, Mo., Feb. 10, 1917.

I feel that the work along the lines of federal legislation to improve mining conditions, getting back of laws such as are in force in Colorado, is a step in the right direc-

tion, and I am more than glad to lend any indorsement that I have in the matter.

(Signed) H. N. TAYLOR.

Canton, Ohio, Feb. 13, 1917.

My opinion is in perfect harmony with the editorial attitude of the Journal.

One of the unguarded points of our national democracy is the condition which makes it possible for a few enthusiastic and ambitious persons who through commendable energy have emerged from the proletariat, become leaders of labor organization, and who in their enthusiasm to make a spectacular showing before their followers, promulgate disturbances in disregard to the rights of others.

The limited sphere of their activities has withheld from them that broad view of industrial progress which is necessary to conserve the interests of certain units of industrial operations that cannot be disregarded without serious damage to the whole industrial fabric.

While it is true that these people and those they represent eventually suffer more proportionately from the results of their premature acts that those they aim to best, it is not wise to depend upon this feature as a deterrent to prevent a repetition of the mistake.

While this element represents a formidable factor in our political arena, public opinion has always come to the rescue of broad-minded statesmanship.

There should, therefore, be no question about the wisdom of adopting a national safeguard such as the Colorado Industrial Commission Law, which will give time for investigation and compromise, and sidetrack many deplorable industrial revolutions.

(Signed) N. K. BOWMAN.

### Richard B. Dole Dies

Richard Bryant Dole, a chemist who has been connected with the United States Geological Survey since 1904, died in Washington last month as a result of a nervous breakdown. Mr. Dole was graduated from Bowdoin College with honors in 1902. During the year following he was an instructor in chemistry in that school. Following this service he was State Chemist for Minnesota, from which position he went to the Geological Survey.

"T. L. Wilson and M. M. Haff have devised an improved process for ammoniating acid phosphate to prevent reversion of the compound to the insoluble form after the ammonia has been added. This end is accomplished by artificially drying the acid phosphate before adding the ammonia until the moisture in the mixture is reduced from 13 to 6 per cent. Ammonia is next introduced in the form of gas."

# MINING CONGRESS CHAPTER IN UTAH PROVING OF IMPORTANT AID TO INDUSTRY

Joins with Bureau of Mines, State Conservation Commission and State Bureau of Mines in Attempt to Push Forward the Mineral Development of the State

BY A. G. MCKENZIE

Salt Lake City, February 23.—A great service has been done the mining industry in Utah by the Utah chapter of the American Mining Congress. An indication of the activity of this chapter is the recently published bulletin announcing and outlining work to be undertaken to locate, classify, develop and record the mineral resources of Utah. In this work the Utah chapter is cooperating with the United States Bureau of Mines, the Utah State Conservation Commission and the Utah School of Mines. In addition, the Utah chapter just has published the total vote by counties on the proposed amendment of the constitution of Utah relating to revenue and taxation. This amendment, which would have done an injustice to the mining industry, was defeated overwhelmingly. The Utah chapter worked energetically and successfully to this end.

From the bulletin mentioned above, the following extract is taken:

"With the intent to encourage and assist the development of the State of Utah, the Utah State Conservation Commission, the Utah State School of Mines and the Utah Chapter of the American Mining Congress, all in cooperation with the United States Bureau of Mines, have adopted an agreement and plan to collect, record, classify and disseminate data regarding the State's mineral resources.

"The plan includes free determination of the mineral nature of certain specimens, instructions in metallurgy, mineralogy, geology and mining for prospectors and such steps as may properly be taken to bring owners of mineral deposits in touch with investors for their mutual benefit and protection.

"It is not proposed to encroach in any degree upon fields now legitimately occupied by private interests. Instead, the organizations named above will endeavor to exercise functions not now being discharged and to supplement where necessary the activities of private interests to develop the State's mineral resources along the best possible lines.

"Although, as a whole, the work of each of the organizations named differs from that of the others, yet the objects of all are in many respects the same. Hence, it is thought desirable to avoid unnecessary duplication of effort by adopting a plan for cooperative work.

"A brief outline of the scope of the work of each of these organizations and other necessary information is given below so that those inter-

ested may clearly understand what is proposed to be done.

## CONSERVATION COMMISSION

"The Utah State Conservation Commission is an official body, created by an act of the legislature in 1909 to investigate and ascertain the natural resources of the State, to adopt and carry out policies and measures to prevent waste of same, to collect and publish statistics and data relating thereto and to cooperate with other agencies along the lines indicated. The Commission's activities include forestry, agriculture, water power, irrigation and minerals, in the development of all of which much valuable work has already been accomplished. The commission is composed of citizens appointed by the governor of Utah and the expense of its work is borne by the State.

## STATE SCHOOL OF MINES

"Aside from the instructions given to students attending the University of Utah and taking work in the Departments of Mining and Metallurgy, it is the aim of these departments to furnish such general information as may be possible and which may benefit the mining industry of the State as a whole. Although these departments have well-equipped laboratories for advanced or research work along the lines of ore dressing and metallurgy, the University is not authorized under the laws of the State to undertake work for private companies or individuals, especially if such work be in competition with engineers, or those conducting private laboratories for ore dressing, assaying, and chemical and metallurgical work in general. However, as before stated, it is the aim of these departments to assist in whatever manner it may be possible for them to do so, in the development of the mineral resources of the State.

## COURSE FOR PROSPECTORS

"Realizing that one way in which this can be done is to help the prospector, they are planning, in addition to cooperating with the Utah State Conservation Commission and the Utah Chapter of American Mining Congress, to offer a special short course for prospectors and those wishing to acquaint themselves with the fundamentals of metallurgy, mineralogy, geology of ore deposits and mining. This course will be given during the winter of 1916-1917. It is scheduled at this time of the year in order to



give prospectors an opportunity to enter the classes, since their work is generally at a standstill in winter. The object of the course is to give those who wish to do prospecting work a knowledge that will enable them to work to the best advantage when out in the field; to teach them how to determine the value of a mineral deposit, how to dispose of the ore, how to secure a purchaser for the property or how to interest others in its development. Many prospectors find deposits of value, but, through lack either of funds or of a knowledge of how to proceed with the exploitation of the deposit, are unable to succeed in developing the property.

"The course to be given is five weeks in length, and the subjects to be considered are to be as follows: A study of the recognition of the valuable minerals by blow-piping and other simple tests; principles underlying the formation of ore deposits, and the nature and composition of the common rocks; assaying for gold, silver, lead, zinc, copper; methods of ore treatment and the marketing of products made; methods of sampling and estimating tonnage in a deposit; mining methods with special reference to small mines and prospects.

"The course to be given is five weeks in length, and the subjects genuinely interested in such work are invited to enter the classes.

#### METALLURGICAL RESEARCH

"At its tenth regular session in 1913 the Legislature of the State of Utah provided for the establishment of a metallurgical research department in connection with the State School of Mines of the University of Utah. The act creating this department states that "The purpose of this research department shall be to conduct experiments and researches, either alone or in cooperation with the National Bureau of Mines and other agencies, with a view of finding ways and methods of profitably treating low-grade ores, of obtaining other information that shall have for its object the benefit of the mining industry, and the utilization and conservation of the mineral resources of the State, and to publish and distribute bulletins and articles to the department and its work."

"By an agreement with the United States Bureau of Mines, the work of the metallurgical research department is under the direction of metallurgists of the Bureau, assigned to duty at the University of Utah. Since January, 1914, Mr. D. A. Lyon, metallurgist, has been in charge of the work, assisted by other members of the metallurgical staff of the Bureau, assigned to duty at Salt Lake City and with headquarters at the University. Since that time, Mr. Arthur E. Wells, metallurgist; Mr. O. C. Ralston, assistant metallurgist; Mr. J. C. Morgan, chemist; Dr. F. B. Laney, microscopist, and R. E. Head, metallurgical assistant, have also been assigned to the work.

#### SCOPE OF EXPERIMENTS

"As will be noted from the above, the act creating this department states that it shall conduct experiments and researches with a view of finding ways and methods of properly

treating low-grade ores. In carrying out this provision of the act, the department first made a preliminary survey in order to obtain some ideas of the location and extent of the low-grade ore deposits of the State. After having determined, as a result of this survey, the probable tonnage of these low-grade ores samples were obtained of the same, as well as tailings and dumps. A study of these samples was made in order to determine the chemical and physical nature of the ore bodies from which they were taken. This having been done, the samples were then tested by various methods in order to find, if possible, an ore dressing or metallurgical process by which the metallic values could be feasibly and economically recovered. However, in doing this work, only those samples were selected which were fairly representative of a certain class of ore in each particular district. In no instance was work undertaken with the idea of working out a process for some particular ore and which was found only on some particular property. In other words, the department has endeavored to avoid doing work which an individual or a company should hire a metallurgist to do, as it is not within its province to do work in competition with the metallurgist or with the mining engineer. For this reason, the department cannot receive ores and make tests on them for an individual or company for the sole purpose of determining what process would be most suited to the treatment of that particular ore. When such work is desired, the department will be very glad to employ such help as may be necessary to do the work and charge it to the party wishing the work done, or to permit the party wishing the work done to do it himself, under the direction of the metallurgist in charge, it being understood that no work of this kind can be carried on in the laboratory of the department which will not, in the estimation of those in charge of the department, have a bearing on the research work of the department that is, furnish additional information as regard the solution of similar problems. Moreover it is understood that any data or information obtained in this way shall be the property of the department as well as of the individual or company doing the work, and can be published by the department if it desires to do so.

"During the past year several companies and individuals have availed themselves of this opportunity.

"It is also stated in the act creating the department, that the department shall have for its object the collection of other information (that is, other than that obtained in making tests of ores to determine what process or processes may be best suited to their treatment) which will be of benefit to the mining industry. Therefore, in conformity with this provision of the act, and in cooperation with the Department of Mining and Metallurgy of the State School of Mines, the State Conservation Commission, and the Utah Chapter of the American Mining Congress, the department is endeavoring to collect as much information as possible regarding the mineral resources of the State.



## IDENTIFICATION OF SPECIMENS

"It hopes to render every service possible to the prospector who may wish to have minerals identified and who would like information as to the possible economic values of certain minerals. It is believed that many specimens which might lead to the discovery of important mineral deposits are discarded because the prospector is unable himself to determine their nature and does not wish to spend on an uncertainty the amount of money necessary to obtain a quantitative test. It is not within the scope of the work of this department to make tests on samples sent in which would necessitate assaying, or to make quantitative tests which would be in competition with the legitimate business of the chemists and assayers of the State. It is permissible, however, for the department to make free qualitative tests of rocks and to inform the sender of the petrographical or mineralogical name of the sample. In other words, it is within the scope of the work of the department to answer definite questions regarding samples of rocks which are sent in, if to do so does not require making an assay or a quantitative chemical analysis. In case the question asked does require the making of an assay, or of a quantitative analysis, before it can be answered, the sender of the sample will be so informed and will be furnished with a list of chemists and assayers who do such work. If the sender of the sample prefers to have the work done by the State School of Mines, the work will be done by this department and will be charged for at the same rate as is charged by local assayers or chemists, plus 10 per cent.

## UTAH CHAPTER

"The Utah Chapter of the American Mining Congress is affiliated with a national organization devoted to the development of mining and improvement of mining conditions. The membership of the Chapter consists of miners, prospectors, mine owners, mine operators, mine officials, mining engineers, assayers, chemists and others interested in the mining industry of the State of Utah. One of the specific purposes of the Chapter is to 'encourage education in practical and scientific mining and metallurgy and the acquisition of scientific information in relation to mining, metallurgy and allied industries.'

"The Chapter desires to assist in every possible way the work of mining prospectors, recognizing that all mining development has its inception in the activities of the prospector, and appreciates that authoritative identification of mineral specimens, especially those of rarer occurrence, will be of great value to the prospectors of the State.

## WORK AND EXPENSE

"The State School of Mines contributes to this work the use of its laboratories and the services of its faculty. The State Conservation Commission contributes the services of its office and field organization, including personal recon-

naissance (that is, a general examination) of mineral ground by its field secretary when necessary or desirable and bears of the laboratory expense. The Bureau of Mines contributes the services of members of its technical staff and organization. The Utah Chapter of the American Mining Congress contributes the facilities of its office and organization and shares the expense of printing, stationery, chemicals and labor to make determination of specimens submitted."

SURVEY ISSUES NEW MAP  
OF CAPITAL AND VICINITY

The Geological Survey has issued an up-to-date map of Washington and vicinity. The urgent need of an authoritative map of the area immediately surrounding the Capital City has long been recognized, as the existing maps resulting from surveys made many years ago are wholly inadequate to meet modern demands.

The field and office work in connection with the preparation of this map have not materially affected the progress of surveys in other parts of the country. The delay in the passage of two recent Sundry Civil bills postponed complete organization of field forces until well into the summer, and until the regular appropriations are available the services of the unassigned topographers were utilized on this project. Other topographers were used in this nearby field work at odd times between their regular field assignments, their field expenses in this vicinity being practically limited to electric car fares.

## Thomas M. Bannan Dies

A topographer of unusual ability, who was widely known among mining men as a result of the work he did in mineral areas, was lost to the Geological Survey last month when Thomas M. Bannan died as a result of an operation. Mr. Bannan has been connected with the Geological Survey since 1888. Among the topographical sheets on which he worked are the following: Phoenix, Ariz.; Globe, Ariz.; Riverside, Ariz.; Teton, Wyo.; Coopers Lake, Ariz.; Bradshaw Mountain, Ariz.; Saypo, Mont.; Bisbee, Ariz.; Ovando, Mont.; Sherman, Wyo.; Tucson, Ariz.; Kirwin, Wyo.; Wind River, Wyo.; Roosevelt, Ariz.; Yellowstone, Wyo.; Gros Ventre, Wyo.; Laramie, Wyo.; Monticello, N. Y.; Price, Utah; Sunnyside, Utah; Lolo, Mont.

## W. S. Robbins Dies

Willard S. Robbins, who has been a member of the staff of the Geological Survey since 1899, died in Washington last month. Mr. Robbins is well known among mining men from the fact that he was in charge of the Geological Survey exhibits at the Panama-Pacific exposition, the World's Fair at St. Louis, and numerous other expositions in this country and abroad. At these expositions Mr. Robbins gave a series of lectures which attracted wide attention.



## H. C. HOOVER GUEST OF HONOR AT AMERICAN MINING CONGRESS LUNCHEON

Noted Mining Engineer Explains Work Done for the Relief of the Belgians—Mining Engineers and Geologists Resident of Washington in Attendance

Mining engineers, geologists and others affiliated with the mining industry attended the luncheon of the American Mining Congress, February 5, at which H. C. Hoover was the guest of honor. The purpose of the luncheon was to hear Mr. Hoover's appeal for more American aid in his work for the relief of the Belgians. He explained that the work of the commission, of which he is the head, is an engineering task and for that reason one to which engineers should be particularly anxious to lend their support. A portion of Mr. Hoover's remarks on this occasion are as follows:

"Americans opened the door to Belgium and have founded and sustained this enterprise in its administrative and in its political phases. We accepted the responsibility of this foundation not for ourselves, but for America. We felt that it was the national duty for America, who stood out unharmed in this vast swelter to keep alight the lamp of humanity. Of the \$250,000,000 spent in this work, approximately \$30,000,000 has come to our hand from the public benevolence of the world and less than \$9,000,000 of this sum has come from the American people. And with the exception of one great gift of \$1,000,000 it has been the little rills of charity of the poor towards the poor. The great bulk of this expenditure has been furnished by the allied governments, and has been debited to the Belgian Government or to the communes or municipalities in northern France which have received its benefits. They have yet to repay all of this expenditure, and they assume this burden cheerfully and with the dignity of free men.

"Of this vast sum of money we have spent over \$150,000,000 in the United States in the purchase of supplies, and of this sum America has made a war profit of at least \$30,000,000. Gentlemen, Europe has begun to take stock of us. We laid claim to idealism, a devotion to humanity, and to great benevolence.

"This has a wider import than mere figures. Time and time again when the door of Belgium threatened to close, we have defended its portals by the assertion that this was an American enterprise, that the sensibilities of the American people would be wounded beyond measure, would be outraged, if its work were interfered with. Our moral strength has been based upon

this assertion. I believe that it is true; but, gentlemen, it is difficult in the face of figures I have given to carry conviction, and in the last six or eight months, time and again we have felt our influence slip from under us.

"I ask you to assume that this city and an area embracing a few counties were occupied by an enemy army. Your boundaries would be marked with a wall of steel. You would be, from military necessity, blockaded of imports. The daily flow of 70 per cent of your food supplies to your cities from beyond the wall of steel would cease, and your markets and bakeries would be empty. Every citizen and every village would hoard food to themselves. You would be interdicted from movement outside of your own ward or village, or from assembly in any manner without permission. Your railways would be taken over for military purposes. All communication would cease with the outside world. Your post, the telegraph, and the telephone would be suppressed. Your factories would be closed and half your people rendered destitute over night, through their loss of wage and income. Your normal newspapers and periodical press would be suppressed. The theatres would be abandoned; your whole intellectual activity smothered. The normal seats of administration would be occupied by enemy soldiers. A sentry would stand on every street corner, and every cross-road, and the instinctive feeling of security of every free man in his right to be heard in justice would be submerged in the practical power over life and death by the enemy army. You would be called upon to contribute to the cost of the occupying army. In a word, the whole economic, intellectual and governmental functions of ordinary life would be suspended.

"In a picture of such a situation you can, however, never imagine the indescribable despair and terror of every citizen, the terror fanned by the millions of rumors which shiver through the population. Couple with this the overshadowing fear as to failure of the very food upon which your women and children survive or die. Consider to yourselves the double weight of anxiety that every understanding man in the community must feel, not only for this, the vitals of bare existence, but for the tranquility of the community lest in the riots that must mark the exhaustion of the meagre stock of food your streets should run with blood. This is war.

"To ensure efficiency we have asked for and always received the advice and gratuitous service of the world's greater commercial houses and banks and accountants and food experts.

The monument of our efficiency lies in the fact that the bread made of flour from Chicago, sold in Belgium to those who can pay has been 20 per cent cheaper than in Washington."

Those attending the luncheon in Mr. Hoover's honor were: Falcon Joslin, Philip S. Smith, R. B. Marshall, G. W. Coggerhall, Whitman Cross, Henry S. Washington, Frank Sutton, W. C. Mendenhall, Willis L. Moore, Arthur Keith, F. G. Cottrell, A. F. Lucas, Edward T. Taylor, George Otis Smith, F. L. Ransome, J. B. Umpleby, Chas. L. DuBoise, Chas. P. Neill, H. C. Morris, S. Sanford, J. Berman, W. H. Craigie, A. F. Dunnigton, W. R. Warner, H. B. Patten, H. D. McCaskey, C. E. Sieben-thal, Fred E. Wright, Geo. S. Rice, David White, Henry M. Auer, Chester Naramore, Donald A. McKenzie, Frank L. Hess, Albert H. Fay, E. S. Boalich, Max W. Ball, Carl H. Beal, N. C. Grover, Joel H. Watkins, A. G. Maddren, C. G. Tudor, Walter T. Paine, David T. Day, Thos. C. Havell, G. A. Waring, E. F. Burchard, D. Z. Hewett, John A. Davis, Theodore Chapin, John L. Cochran, Frank M. Johnson, Charles L. Parsons, C. N. Fenner, Esper S. Larsen, Frank C. Calkins, B. S. Butler, Clay Tallman, J. K. Clement, Geo. S. Pope, P. M. Anderson, Philip M. Riefkin, King H. Young, M. R. Campbell, Alfred H. Brooks, Van H. Manning, Hennen Jennings, J. F. Callbreath and Paul Wooton.

### Complete Shaft in Norway.

The E. J. Longyear Company, Exploring Engineers of Minneapolis, has completed the sinking of a 1,100-foot shaft for the Orkla Mines Company at Lökken Verk, Norway. A part of the organization from that work will be sent to the Cuyuna Range in Minnesota, where the company is about to begin work on a shaft for the Pittsburgh Steel Ore Company at its Rowe Mine.

## Recent Legal Decisions

### DEDUCTIONS FOR DEPRECIATION

The mining of ore is equivalent to manufacturing process in which the ore in place constituting the raw material used. There is no more reason for allowing a lessee of a mine upon a royalty basis any deduction for depletion of ore in addition to the royalty paid than there would be to allow a manufacturer of lumber who has the right to cut and remove all the timber upon a certain section of land at so much per thousand feet a deduction in addition to the price per thousand paid, for depletion of timber for one year's cut. Each has a right to take all there is at a certain price per unit of measurement. Each is engaged in a manufacturing process, using raw material. Each is entitled to deduct

from the cost of such material used as a part of the cost of the manufacturing process. The fact that an unascertained quantity is bought does not entitle them to a deduction for depletion any more than when a specified quantity is bought. Neither does the fact that ore is taken from under the surface of the earth change the situation. The price paid by the lessee of a mine for ore taken out measures the cost of the raw material to him in the form in which he takes it, and to this must be added the cost of mining and marketing, including depreciation to plant and other proper expenses connected with the business, to arrive at the total cost thereof; and when such total cost has been allotted he has been allowed all the cost that has been incurred.

Klar, Piquett Min. Co. *vs.* Platteville (Wisconsin), 157 Northwestern, 763, p. 764; May, 1916.

### EXPERT EVIDENCE

In an action for damages for injuries to a miner caused by a projection in an entry it is not proper for an expert or a mine examiner to testify that he had examined the mine at the place pointed out and found no conditions which he thought necessary to report as being unsafe, as it is a question for the jury, from the facts testified to, whether places and conditions are safe or dangerous, and where all the facts can be ascertained and made intelligible to the jury expert opinions as to whether such conditions were safe or unsafe should not be received in evidence.

Bell *vs.* Toluca Coal Co. (Illinois), 112 Northeastern, 331, p. 314; April, 1916.

### MANHOLES IN ENTRY

A coal mine operator who failed to provide manholes in an entry at intervals of not more than 60 feet, as required by the statute of Kansas (Gen. Stat. 1909, Sec. 4987), cannot be held liable for injuries to a miner in the entry unless there was a causal relation between the failure to perform this statutory duty and the injury to the miner, as there can be no actionable negligence where the omission is not the proximate cause of the injury complained of.

Oplotnik *vs.* Cherokee and Pittsburgh Coal Min. Co. (Kan.), 158 Pacific, 21, p. 22; June, 1916.

### MINERS' WASH ROOM LAW

The statute known as the "Miners' Wash Room Law" (Burns, 1914, Sec. 8623), requiring mine operators under certain stated conditions to construct and maintain a wash room for the miners is constitutional and valid.

Princeton Coal Co. *vs.* Fettingier (Indiana Supreme), 113 Northeastern, 236; June, 1916.



# FATALITY RATE IN COAL MINING INDUSTRY REACHES NEW LOW RECORD

**During 1916 there Was One Death for Each 269,000 Tons of Coal Mined—Fatality Rate of Three to the Thousand Lowest since 1898, when Only Half Number of Men Were Employed**

Nineteen-sixteen was a banner year in the low record of coal-mine fatalities in the United States. The decrease is about 3 per cent as compared with 1915, while the production of coal increased about 12 per cent. The number of fatalities reported during the year was 2,225 as compared with 2,269 for 1915. Figures are not yet available showing the actual number of men employed during the year, but on the basis of the number of men employed in 1915 the fatality rate was 3.03 in 1916 as compared with 3.09 per 1,000 men employed in 1915. This is the lowest rate since 1898, when about one-half the number of men were employed.

According to the Geological Survey the estimated production of coal for 1916 was 597,000,000 tons as compared with 531,619,487 tons in 1915, so that the number of tons of coal mined per fatality in 1916 was 269,000 as compared with 234,297 in 1915, and 209,261 in 1914. The production per fatality in 1916 is therefore the greatest in the history of coal mining in the United States.

During 1916 there were 11 mine disasters in each of which 5 or more men were killed, being the same number as in each 1915 and 1914. The number of men killed by these disasters in 1916 was 154, the lowest since 1901, as compared with 262 in 1915, 316 in 1914, and 464 in 1913. The principal net decreases in fatalities for the year are as follows: Falls of roof and coal, 14; gas and dust explosions, 78; explosives, 9; surface accidents of all kinds, 12. While in the above causes there was a gratifying decrease shown by reason of the educational work conducted with reference to the study of gas and dust explosions, and the introduction of permissible explosives, there was a net increase of 43 fatalities due to mine cars and locomotives underground, and an increase of 8 in various shaft accidents. As haulage systems necessarily increase in scope as the mines become larger, there should be a concentrated effort on the part of all to reduce the hazards connected with this feature of the mining industry.

Although the net decrease is not large, yet it shows that the efforts exerted by the various agencies whose object is to reduce mine accidents are meeting with success. Among the means employed to reduce accidents may be mentioned the general use of safety lamps in doubtful mines, the introduction of permissible explosives, humidifying dusty mines,

first-aid and rescue training which save lives that might otherwise be lost by reason of injuries received; the enactment of industrial accident compensation laws, and the spirit of cooperation on the part of all concerned.

## GRAPHITE MINING ON THE INCREASE; IMPORTS ARE LARGER

Much increased activity in the mining of graphite is being reported to the Geological Survey. While more mining operations of this character are being conducted in Alabama than in any other state, graphite deposits are receiving attention in several parts of the country. The graphite work at the Geological Survey is now in charge of H. G. Ferguson, who has just completed a tabulation of all purchasers of graphite in the United States. This list shows the qualities of the graphite which are being used. This list may be obtained by any one interested on application to the Geological Survey.

Despite the increasing demands on the shipping of the allied nations there has been an increase in the importation of graphite. The greater portion of this has come from Ceylon. England is allowing shipments of this graphite under certain contracts and evidently is encouraging shipments to this country where it is being used to a considerable extent in the munition industry.

## INSPECTIONS STARTED FATALITY RATES ON RAPID DECLINE

"The average number of men killed per thousand in coal mines showed a rapid decrease from the date of the earliest mine inspection in 1869, when it was nearly 6 per 1,000, to less than 3 per 1,000 in the first five years of State inspection. Little change in the fatality rate was then evident for nearly twenty years, when an increase resulted from the large production per man and the intensive activities due to the introduction of mining machinery and electricity, coupled with deeper mining. As quickly as the causes of this accident increase were determined, remedies were applied, with the result that the fatality rate in coal mining has fallen rapidly from the second maximum reached in 1907 of 4.08 per 1,000 to 3.22 per 1,000 last year, and in metal mining from 4.19 per 1,000 in 1911 to 3.54 per 1,000 in 1914." (Extract of address by H. M. Wilson.)

## TOPOGRAPHIC ENGINEERS JOIN RESERVE CORPS OF THE ARMY

Secretary Lane has approved the applications of ninety-three topographic engineers in the United States Geological Survey, Department of the Interior, for commissions in the Engineer Officers' Reserve Corps of the Army. This corps is established in conformity with the general plan, now being rapidly worked out by the War Department, to organize and have instantly available for active service in time of need a large number of specially qualified men. The topographic surveys and maps made by the Geological Survey are recognized as absolute war necessities, and this Survey is now carrying on special field work in cooperation with the Engineer Corps of the Army to produce military maps. The field engineers of the Geological Survey are all men of special training and wide experience.

The twenty-three men whose names follow have passed the necessary army examination, and it is understood that their commissions as members of the Reserve Corps will soon be issued by the War Department: Frank Sutton, Glenn S. Smith, Edwin Caleb Burt, Frank Allison Danforth, Aldace Henry Davison, John Ross Eakin, Elmer Lamont Hain, George Thompson Hawkins, William Harrison Herron, Bertram Andrews Jenkins, James Henry Jennings, Luria Lyons Lee, Leroy Streeper Leopold, James McNair Rawls, Robert Bradford Marshall, William Laval Miller, Thomas Hughes Moncure, Robert Muldrow, Charles Henry Pierce, Asahel Benson Searle, Oliver Guy Taylor, Albert Maynard Walker, John Harold Wilson.

The remaining seventy applications from topographic engineers have been forwarded by the Director of the Geological Survey to Secretary Lane who has transmitted them with his approval to the War Department. They are as follows: James W. Bagley, Newton E. Ballmer, Edward M. Bandli, Thomas M. Bannon, Ralph W. Berry, Lewis F. Biggs, Claude H. Birdseye, Sidney H. Birdseye, John E. Blackburn, Albert O. Burkland, Robert H. Chapman, Raymond G. Clinite, Charles H. Davey, George R. Davis William E. Dickinson, Jesse A. Duck, Basil Duke, Conrad A. Ecklund, Richard T. Evans, Charles R. Fisher, Samuel P. Floore, Alvah T. Fowler, James I. Gayetty, Wilmer S. Gehres, Thomas G. Gerdine, Calvin E. Giffin, Lawrence B. Glasgow, William H. Griffin, Duncan Hannegan, Charles Hartmann, Oliver W. Hartwell, Russel M. Herrington, Walter F. Hicks, Herbert H. Hodgeson, Clyde C. Holder, Frank W. Hughes, Emory I. Ireland, Oscar Jones, Sidney A. Judson, Andrew J. Kavanagh, Clyde B. Kendall, Reuben A. Kiger, James B. Leavitt, John L. Lewis, Sigurd G. Lunde, Harry L. McDonald, Eugene L. McNair, Joseph B. Metcalfe, Jr., Roy R. Monbeck, William H. S. Morey, Kostka Mudd, Oscar H. Nelson, Alexander J. Ogle, Thomas P. Pendleton, Stuart T. Penick, Albert Pike, Roscoe Reeves, Arthur C. Roberts, Leo B. Roberts, Martin A. Roudabush, Carl L. Sadler, Rufus H. Sargent, T. Foster

Slaughter, John G. Staack, Clarence A. Stone-sifer, William O. Tufts, Dallas H. Watson, Joseph H. Wheat, Frank L. Whaley, James M. Whitman, Jr.

The total number of applications for army commissions thus far submitted amounts to 80 per cent of the topographic field force of the Geological Survey.

## CALIFORNIA INDUSTRIAL COMMISSION DOING GOOD WORK

Few efforts to secure a higher standard of conditions as effect mining are attracting more attention among Government specialists than that of the California Industrial Commission. The Bureau of Mines is cooperating with this commission. It will be recalled that H. N. Wolflin and Edwin Higgins did notable work in this connection. Mr. Wolflin continued in this work until he was summoned to be mine safety engineer of the Bureau of Mines. He was succeeded by Mr. Higgins, who recently resigned to enter into private employment. The demand for Mr. Wolflin's return was so great that he again has been assigned to this work. D. J. Parker, Mr. Wolflin's assistant at Pittsburgh, has been made mine safety engineer of the Bureau of Mines.

## Study Regulations for Contests

Efforts are being made to secure a more systematic method of judging contests between mine rescue and first aid teams. George S. Rice, the mine engineer of the Bureau of Mines, has this matter under consideration and is discussing it with those interested.

## Personals

John A. Davis, the superintendent of the mining experiment station at Fairbanks, Alaska, was in Washington recently, before starting on a visit to the principal branches of the Bureau of Mines. Mr. Davis will familiarize himself with the work being done by the Bureau so as to be in a position to conduct the work at Fairbanks without danger of duplication. He expects to arrive in Fairbanks, June 15.

E. W. Parker, head of the Anthracite Bureau of Information at Wilkes-Barre, Pa., was a visitor to Washington last month.

Thomas N. Mordue, for the past sixteen years with Castner, Curran & Bullitt, has sold his interest in the company and is planning an extensive trip to California and Honolulu. Upon his return to Chicago, he will open offices and handle contract business.



D. W. Brunton, of Denver, formerly president of the American Mining Congress, sailed for Shanghai, China, February 12.

The Lake Superior Mining Institute will hold its annual meeting March 13-14-15, at Birmingham, Ala.

Horace V. Winchell has gone to Siberia.

Dr. Henry Mace Payne attended the Northwest Mining Convention at Spokane as a special delegate representing the American Mining Congress.

James B. Pauley, for many years connected with the International Harvester Company, has been elected vice president of the J. K. Dering Coal Company, of Chicago.

Jackson K. Dering, of Chicago, has been elected president of the O'Gara Coal Company. T. J. O'Gara resigned as president of the company to look after personal interests. This in no way interferes with the J. K. Dering Coal Company. Mr. Dering simply adds his new duties to his responsibilities.

T. M. Bannan, of the topographic branch of the Geological Survey, died in Washington last month as a result of an operation.

Frank Reed, of the Geological Survey, has been sent to Salt Lake City to study the methods of polishing opaque surfaces which have been developed at the Bureau of Mines station at that point. This method will be used in the petrographic laboratory of the Geological Survey.

Clyde T. Griswold, of the Associated Geological Engineers, is examining various fields in Oklahoma. F. G. Clapp, managing geologist of the Petroleum Division of that organization, is in Wyoming. M. L. Fuller is touring the South. Ernest Marquardt is studying southern and central fields, while E. B. Hopkins is in Mexico for clients of the firm.

President Hammerschleg of the Carnegie Institute of Technology was in Washington recently.

Dr. I. C. White, State Geologist of West Virginia, was a delegate to the annual meeting of the Chamber of Commerce of the United States which was held in Washington last month.

E. B. Sutton has been made district engineer of the Bureau of Mines for the Southeast. His headquarters are at Birmingham.



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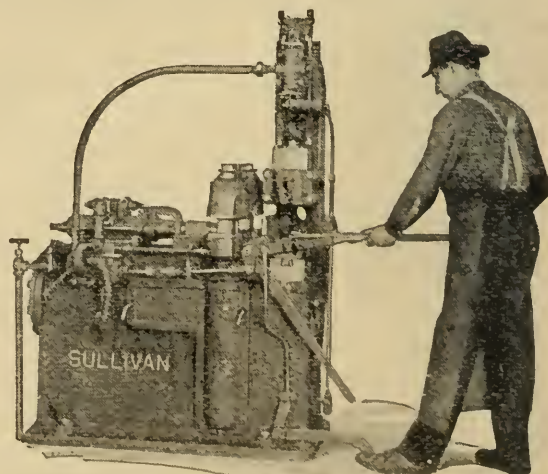
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# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## THE COLORADO INDUSTRIAL DISPUTES INVESTIGATION ACT

References were made in the March issue of THE MINING CONGRESS JOURNAL to the comprehensive effort which was being made to bring about the repeal of the Colorado Industrial Commission Law providing for the compulsory investigation of industrial disputes. We are very much gratified to know that notwithstanding the determined effort which was made, that the bill providing for the repeal of this law was defeated in the Colorado Senate by a vote of 28 to 3.

In summing up these matters Senator George Lewis said:

"Opposition to the amendments comes from labor agitators who feel that their calling is jeopardized by the law, because under its provisions their power to order men out into battle against law and order is fast ebbing away. They are of that class of men who would destroy industry to perpetuate their own power.

"I have seen these labor wars; I know these labor leaders. Yet I have never seen the bodies of the Grant Hamiltons, the Ed Doyles, the John Lawsons or the Billy Haywoods lying stiff and stark in death when the smoke of battle cleared away. The dead are always the poor deluded followers of these men, and the latter could always be found in safety and luxury afterward, seeking new followers to drive before other guns."

As was noted in the March issue, open threats have been made on the part of labor leaders that unless this law was repealed its provisions would be openly violated. It is to be hoped that these threats were made in the heat of passion and does not represent the sober judgment of organized labor.

In a democratic government no citizen or collection of citizens, even though it may be in the majority, is justified in the violation of a law. The good citizen will immediately undertake to convince enough of the majority that his position is right in order that at the next election his theory may be put into effect by the representatives whom a majority shall elect. Any other course is un-American, and a menace to the liberties of the people.

## WILL COPPER PRODUCERS' EXAMPLE BE EMULATED?

Action of the copper producers of the United States in offering their product to the Government at normal prices is an act of generosity and patriotism that we do not expect to see emulated in many of the industries. With an active market for copper at 37 cents, nearly every producer in the country has agreed to join in furnishing the Government 45,000,000 pounds at 16 and a fraction cents. Will the producers of cotton, wheat and other products be as generous?

To realize just how generous is this offer of the copper producers, it should be applied to all other materials which the Government will have to buy for the prosecution of the war. It is to be hoped that the Government will meet the same spirit on every hand and be able to buy many of its supplies on the basis of the average price of the ten-year period preceding the war.

After all the demagogic talk about the war spirit being manufactured by those profiting from the munitions trade, this action of the copper men comes as a fitting rebuke. To those in a position to



know the facts, these charges have been given scant consideration, because they know these charges are baseless. Unfortunately, all of the people have not been in a position to know the facts and many, especially among the less informed elements of the population, believe that there is truth in the assertion. It is difficult to reach the uneducated and more difficult still to change an opinion they once formed. Such an unusually magnanimous act, however, should go far toward convincing everyone that there are no more patriotic citizens than these men to whom unkind reference frequently has been made.

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### MINING AND CONSERVATION

Mining is the only business in which the world's supply for all future generations is already in existence. It is the business where true conservation theories should apply with greatest force. Its inherent tendencies toward self-destruction cannot be avoided and cannot be reduced to the minimum except through cooperation. Those who by mutual agreement control the production of the mineral wealth of the country are more subject to prosecution than are those who limit the supply of wheat, because the farmer is made immune from the provisions of the Sherman law by the Clayton bill.

Is it not time that a united stand should be taken by the mining men of this country to be put on a different footing from other industries? Mining is the only business the life of which is shortened by its activity and success.

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### ORGANIZED LABOR

A specially sensitive friend of THE MINING CONGRESS JOURNAL takes exception to some of its editorials upon the general question of the relation of employer and employe, and asks whether we mean to favor the abolition of labor unions. We are glad to reply, because no permanent good can be accomplished without a clear understanding of the basic principle involved. THE MINING CONGRESS JOURNAL is not opposed to labor unions. On the contrary,

it believes in organized labor and believes that it has accomplished great good. It believes that the organization of labor into unions is almost a necessity under present-day industrial conditions.

It is probably impossible for the American Mining Congress to add to the number of its friends by standing for the right of laboring men to organize in unions or as they please and in a legal way to fight for their demands, and at the same time insist that labor, when so organized, shall be required to obey every law and that every law enacted shall be equally applicable to all citizens. It is more likely to draw to itself the criticism of those upon one hand who believe that the acts of organized labor must necessarily always be right and those upon the other side who do not believe that labor has a right to organize for the purpose of bettering its conditions and increasing its wages.

It is only when organized labor undertakes by force and in violation of law to gain advantage that we condemn its acts. It is when the representatives of organized labor openly threaten to violate law and to defy the edict of the courts that we believe them to be subject to the most severe criticism.

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### THE GEOLOGICAL SURVEY

#### AND PREPAREDNESS

The Geological Survey is by law established not only for the survey, with mapping and description, of the mineral resources of the country and for the diffusion of information relating to them, but also for the accounting of the drafts made on these stores each year and for the reporting on the status of the respective mineral industries. It is therefore both logical and to be expected that the Survey should in this period of general inquiry as to our preparedness for defense give the public the benefit of its knowledge and experience as based on its geological investigations and statistical information. The country should not have to depend on committees from academic or technical associations for information which the governmental branch especially

founded for such purposes, though inadequately sustained in its work, may be able to furnish more easily, with greater accuracy, and with an authority that has earned the confidence of the people.

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### ANOTHER WESTERN OPPORTUNITY

The adjournment of the Sixty-fourth Congress without affirmative action upon the various bills affecting the public lands and power resources of the West is a matter of great congratulation. It leaves open one more opportunity for the West to organize a movement designed to prevent the revolutionary changes, which have been proposed by the leasing bills, in the method of control and development of those western resources upon which its future greatness must rest.

The West is under special obligation to those of its Senators who stood squarely against the radical changes of policy which were proposed, and who did not allow themselves to be swerved from their devotion to a great underlying principle of government in order that temporary gain might be secured.

It may not be surprising that opposition to this new system has been so desultory and spasmodic. The individuals who have been interfered with by virtue of this policy are few in number and the public does not appreciate that preventing the development of enterprise has the same effect as the stifling of an enterprise already developed.

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### ACCIDENTS AT METAL MINES, 1915.

The Bureau of Mines has just issued its fifth annual report on accidents at metal mines in the United States. This report was compiled by Albert H. Fay as Technical Paper 168, and contains 114 pages of detailed information concerning accidents and their causes, by groups of mines, as copper, iron, gold and silver, etc.; and also classified by States and mining methods. Wherever possible figures are given for each of the five years. Data of the character con-

tained in this report will be of much assistance to operators, and accident compensation commissions in establishing a just insurance rate, and at the same time point out to operators and miners the chief causes of accidents, so that they may be able to tackle mine hazards from the proper angle.

The report for 1914 contained details of mine accidents classified by mining methods. The 1914 figures are supplemented in the 1915 report with similar data, and from this it is an easy matter to point out some of the principal hazards of each of the various systems of mining as room and pillar, overhand stoping, steam-shovel mining, etc. The mining-method statistics are illustrated by two diagrams, which show the relative hazard by causes for each of the mining systems studied. The metal-mine accident figures in a number of tables are reduced to a 300-day basis, so that comparisons are on absolutely the same basis. Comparative figures are also given for the coal mines, quarries and metallurgical plants. Details are also given showing accidents due to explosives. At the close of the report is a brief summary of the State laws as related to inspection and compensation laws with reference to the reporting of accidents.

The bureau is to be congratulated on the completeness and comprehensiveness of this report. It is through reports of this character that the bureau is aiding the mining industry, yet were it not for the cooperation rendered by the mining companies it would not be possible to supply them with classified and detailed information regarding the hazard of the industry. The fatality rate of 3.64 per 1,000 men employed, and the non-fatal accident rate of 2.32 per 1,000 are entirely too high. The diagnosis of the risk is given in this report from which remedies may be prescribed by inspectors, safety engineers, operators and individual miners.

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### ALASKA COAL FOR THE NAVY

The present world situation demonstrates most forcibly the unwisdom of the activities of the Federal Government



looking to the alleged conservation of the coal resources of Alaska. That the coal supply of the Pacific Coast naval fleet should be carried in bottoms through the Panama Canal and the success and existence of that fleet carry with it all the perils of the transportation of this coal is a situation which cannot be regarded with equanimity.

In considering this particular situation it will be remembered that coals from the Matanuska coal field in Alaska, after thorough test by the Navy Department, were pronounced to be equal in value for naval use with the coal of the Pocahontas field. The Pocahontas field is ready to supply fuel not only to the Pacific Coast fleet, but also to the Atlantic Coast fleet. These fields were developed by private enterprise. Development of the Matanuska coal fields has been denied to private enterprise; the fields are undeveloped; the Pacific Coast fleet cannot have fuel from that source for its use, and the unwisdom of the course followed by the Federal Government needs no additional demonstration.

The failure of the Sixty-fourth Congress to enact any of the so-called leasing bills and the failure of several preceding Congresses to pass any except the Alaskan coal leasing bill, which thus far has demonstrated its absolute unworkability, opens to the West another opportunity to arouse itself and make a united and determined effort to be allowed to work out the development of its industrial life in accordance with local requirements.

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### PRICE REGULATION

The recent agreement made under the auspices of the Federal Trade Commission, by which the manufacturers of paper and publishers by agreement fixed the price of print paper for the current six months at  $2\frac{1}{2}$  cents per pound, has accomplished a substantial benefit to the users of print paper without doing injustice to the manufacturer.

The Federal Trade Commission makes it clear that it is not undertaking to act

as an agency of the Government to fix prices, but is serving only as an arbitrator.

It has been assumed that a threat of prosecution by the Department of Justice was the impelling inducement which brought the manufacturers of print paper, who are receiving much higher prices for their stock, to come before the Federal Trade Commission and agree to accept a lesser price and that the agreement entered into was a means of escape from possible penalties under the Sherman Anti-Trust law.

To accept this is to assume that the Federal Trade Commission and the Department of Justice in their dual capacity make up the single agency with the power which many believe should have been given to the Federal Trade Commission direct.

Many of the original advocates of the creation of a Federal Trade Commission urged it upon the ground that there was a twilight zone between unfair competition and fair business combination in which dishonest men were able to cover up unfair business transactions and which honest men were loath to enter. It was contended that the Trade Commission should be given the power to supervise business combinations and give its approval to such as would make for greater efficiency in the production, distribution and exchange of the articles of commerce, and which would not add unfair burdens upon the consuming public. It was believed that this function should be kept entirely separate from the Department of Justice, which could prosecute without other restriction than that its final judgment should be a mandatory order prohibiting a continuance of the act complained of.

Another phase of this question is evidenced by the recent indictment of a number of coal operators in the Pocahontas and New River regions of West Virginia. The conditions surrounding the coal operations which are complained of are in some respects similar to the situation in the paper-price issue referred to. A radical difference lies in the fact that the paper manufacturers

control the greater part of the paper production of the country, while the coal operators referred to produce less than 4 per cent of the coal production of the United States.

In both instances the price had increased in about the same ratio as the price of all other products. It is not generally believed that any convictions will result from these prosecutions. Coal prices had everywhere advanced and there seems to be an equal reason why indictments should be laid against the producers of every other product with market prices so high as to justify public complaint. It has been intimated that these indictments were returned with a hope that it would result in more reasonable prices. This is perhaps another way to reach that field of service which the original advocates of the Federal Trade Commission hoped to have it perform, namely, that it should exercise the same authority with relation to general business affairs that the Interstate Commerce Commission does with reference to transportation matters.

### CAPTAIN JACK, THE POET-LARIAT OF THE AMERICAN MINING CONGRESS

The death of John Wallace Crawford, of Woodhaven, L. I., on February 28, removes one of the picturesque figures of the early development of the West, and a man who was particularly well known to the members of the American Mining Congress during the early days of its history.

Capt. Jack Crawford, the poet-scout, was a breathing spirit of patriotism and an inspiration to all the better things of life. He was wont to call himself the "poet-lariat" of the American Mining Congress, and always maintained his interest in the organization. The following photographic reproduction of one of his most inspiring poems will be read with interest by the old-time members of the Mining Congress:

To .

My friend & Pard-J. F. Callbreath, Jr.

#### A Sunshine Boomerang.

When a bit of sunshine hits ye  
After 'passin' o' a cloud,  
An' a fit o' laughter gits ye,  
An' yer spine is feelin' proud.  
Don't fergit to up an' fling it  
At a soul that's feelin' blue,  
Fer the minit that ye sling it  
Its a boomerang to you.

#### The other Side. *New*

When a streak of bad luck nips you  
An' you're down an' almost out,  
When the devil's see-saw rips you,  
Think of this old Broncho scout.  
Often busted, bruised and bleeding,  
But the hand that held the rod,  
Was the hand that I was needing  
The Almighty hand of God.  
Your friend,

Sept. 25th,  
1911.

*W. Crawford.*  
*apt. Jack*  
*Poet Lariat M.C. C?*

### TIME FOR WESTERN ACTION

It is time that a comprehensive effort shall be made through which the West shall agree upon a general plan which will not hamper western development but at the same time will meet the reasonable demand which has furnished the basis of the so-called conservation movement, namely, that national resources shall not be permitted to pass into the hands of private monopoly.

That part of this program which requires that the national resources of the Western States shall continuously pay tribute to the Federal Government is unjust in principle and entirely antagonistic to the constitutional rights of the several States.

What the West needs is a comprehensive platform upon which all may agree and a comprehensive demand that this platform shall be carried out by the Federal Government. What are the principles upon which it would seem all could be brought to support?



First, that national resources shall not be permitted to pass into private ownership under conditions which prevent public control in case this ownership is used to public disadvantage. Second, that the national resources within any State shall be utilized for the development and support of the public institutions of that State. Third, that the control of this development shall be with those who are interested in the State's growth, who are so situated that executive action can be made to fit the changing demands of industrial life and not subjected to the restrictions of a cumbersome body thousands of miles away, lacking the knowledge or possibility of having that knowledge which would insure intelligent action. We believe these principles will meet with the support of the West and that no other part of the nation can successfully contest the justice of these demands.

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#### COOPERATION UNDER FEDERAL SUPERVISION

A recent referendum of the United States Chamber of Commerce upon the question of combinations as related to natural resources demonstrates that the business interests of this country are overwhelmingly in favor of proper business combinations. The report of the board of directors to the fifth annual meeting, held in February, 1917, contains the following:

"The Sherman law was devised to aid, not to hinder, American business. Conditions particularly in the coal and lumber business have been such of recent years as notoriously to lead to waste of these natural resources, while neither capital nor labor found that profit and wage in them and such healthy conditions of production as they deemed essential. A limited form of combination was put forward as a remedy for these conditions and a special committee submitted to the board a report recommending a certain latitude of combination under strict federal supervision. This report was issued to referendum vote November 28 and the voting closed January 12, 1917.

"Referendum No. 17.

"The committee recommends that there should be remedial legislation to permit co-operative agreements under Federal supervision in those industries which involve primary natural resources, on condition that

the agreements in fact tend to conserve the resources, to lessen accidents and to promote the public interest.

"1,034 votes in favor; 110 votes opposed."

It is believed that there are many reasons why the mining industry should receive special consideration from government agencies. An editorial statement by the Black Diamond, a leading coal trade journal, says:

"The Government can limit the profit of the coal men today if it will allow them to limit their losses tomorrow. Every coal man in America would make that trade in five minutes if the Government should propose it."

The production of the mineral resources of the nation is too vital to its prosperity to be the subject of haphazard control or foolish prosecution. It has a right to reasonable and continuous profit. But a small part of the excess prices now being paid for coal goes in the pockets of the coal producer. The larger part of the coal which has been sold upon the market at the abnormally high prices of the past year has been under contract at the old prices, some of which are very much below the present cost of production. To illustrate: A West Virginia coal company a few weeks ago sold a car of coal at \$1.60. The consignee before paying for the coal, sold and delivered it to another broker and then made an assignment for the benefit of his creditors. That car of coal passed through the hands of seven different brokers before it reached the consumer and was actually sold at a price several times greater than the original price.

These facts were made public through the efforts of the coal producer to collect the price for this car of coal, and this company is now under indictment because it proposes to ask \$3 for coal for which the consumer is paying \$7. Surely there is need for a better co-operation in the management of the coal business.

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#### PREPAREDNESS AND DEVELOPMENT

The public was quickly aroused when the Canadian embargo upon the transmission of electrical power at Niagara Falls prevented the production of cya-

nide and other chemicals which were essential to industrial production, and Congress quickly responded to that demand by the passage of an act which permitted the development of more power from the American side of the river.

The public was not quickly aroused by the fact that the development of other water-power resources within our borders had been for years prevented by Federal prosecutions based on technical grounds, which not only prevented the development of this particular enterprise, but served warning upon others that investments in such enterprise would be subject to attack.

In the recent contest concerning the oil leasing bill, objection came from those who had made investment under the law and who sought only to protect the investment which they had already made, and which under the proposed law might, through technicalities, be confiscated by the Government.

These prosecutions were based upon the theory that the public interest was to be protected thereby. The fact is that so far as water-power development is concerned, the State laws have full authority to regulate and control the production of hydro-electric power, this authority growing out of the necessity for use of waters for irrigation purposes. The pretense that the people of the State of Colorado are to be protected from monopoly by the confiscation of the rights of way of the Colorado Power Company is too flimsy to be accepted by any except visionary conservationists who believe in the conservation policy of the Indian—which conserves everything and uses nothing.

What the country needs is the development of its resources. The present world situation intensifies the need, not of conservation but of development and production.

Germany's great strength in the present world conflict was immeasurably increased by its prompt acquisition of the mineral fields of Belgium and eastern France. Undeveloped mines, unharnessed water powers and oil resources 2,000 feet below the surface will be of little use in that preparedness which is

today of great necessity. This development is of unmeasured importance to the nation as a whole. It is particularly important to the western States. Is it not time that these States should undertake in a systematic and comprehensive way to show the nation at large the importance of maintaining the system of government control of public lands, which has demonstrated its practicability.

#### **HILL AND MCGRAW COMPANIES**

##### **EFFECT A COMPROMISE**

The McGraw Publishing Company, Inc., and the Hill Publishing Company, New York, have been consolidated as the McGraw-Hill Publishing Company, Inc. The new company acquires all the properties and interests of the two constituents, including the following technical journals:

Electrical World, Electrical Railway Journal, Electrical Merchandising, Engineering Record, Metallurgical and Chemical Engineering, the Contractor, American Machinist, Power, Engineering News, Engineering and Mining Journal, and Coal Age.

Two of these papers, Engineering News and Engineering Record, will be consolidated under the name, Engineering News-Record, with Mr. Charles Whiting Baker, now editor of Engineering News, as editor-in-chief.

Mr. James H. McGraw will be president of the new company, Mr. Arthur J. Baldwin (now president of the Hill Publishing Company), vice-president and treasurer, and Mr. E. J. Mehren, vice-president and general manager.

#### **TECHNICAL MEN LEAVING**

##### **GOVERNMENT SERVICE**

Technical men are leaving government service in greater numbers than ever before. The loss to the Geological Survey and Bureau of Mines is becoming acute. It is very evident that steps must be taken very soon to permit substantial increases of salaries.

##### **Dr. Douglas Retires.**

George Notman, secretary of Phelps, Dodge & Company, has issued this announcement: "Effective this date, Dr. James Douglas has resigned as president of this company and has been appointed chairman of the board"

##### **"Metal Statistics" Out**

"Metal Statistics" for 1917 has been issued by the American Metal Market and Daily Iron and Steel Report. The American Metal Market is the pioneer daily newspaper in the metal, iron and steel trades. The convenient sized volume is the tenth annual edition of "Metal Statistics." New data has been included in the work this year. C. S. J. Trench and B. E. V. Luty are the editors of the American Metal Market.



### SURVEY FURNISHES ARMOR PLANT BOARD MUCH DATA

Exact information as to the nearest source of ample supply of the minerals needed for the conduct of the Federal armor plate plant has been requested of the Geological Survey by the board having this matter in charge. The Interstate Commerce Commission has been called upon to furnish information with regard to freight rates on these necessary minerals entering into the armor plate. Gas-producing and steam coal, bessemer pig iron, nickel, ferrochrome, ferro-manganese, ferro-silica and flux are necessary factors in considering the location of the plant. The fluxes are specified as limestone, dolomite and fluorspar.

Nothing has developed in Washington during the past month to indicate that the supposition that West Virginia would get the armor plate plant is likely to be wrong. It is pointed out, however, that Ironton, Ohio, which is across the river from Huntington, West Virginia, possesses all the advantages for the plant offered by Huntington.

The following is a tabulated estimate of the raw materials which will be required annually in the production of 20,000 tons of armor:

|                          | <i>Tons.</i> |
|--------------------------|--------------|
| Coal, gas producing..... | 150,000      |
| Coal, steaming.....      | 150 000      |
| Bessemer pig.....        | 30,000       |
| Nickel .....             | 1,200        |
| Ferrochrome .....        | 2,600        |
| Ferromanganese .....     | 200          |
| Ferrosilicon .....       | 50           |
| Limestone }              |              |
| Dolomite } fluxes .....  | 5,000        |
| Fluorspar }              |              |

The gas producer coal should be reasonably free from sulphur.

The pig iron heretofore used in the process of the manufacture of armor plate, as developed by the armor makers in this country, is known commercially as Bessemer pig and contains less than one-tenth per cent of phosphorus. The following is the specification for the pig iron required by one of the armor makers:

|                  |             |
|------------------|-------------|
| Phosphorus ..... | under .1%   |
| Sulphur .....    | under .04%  |
| Silicon .....    | .9 to 1.35% |
| Manganese .....  | under .75%  |

The armor steel scrap forms about 50 per cent of the charge of the furnace and is obtained from the ingot discards and the trimmings from the armor plates.

The ferromanganese, ferrochromium and ferrosilicon are market commodities.

The limestone, dolomite, fluorspar and burnt lime are used as fluxes.

### BUREAU OF MINES STUDYING IMPURITIES IN OXYGEN

With the increase in the use of breathing apparatus in mine-rescue work, the Bureau of Mines is becoming increasingly interested in the oxygen prepared to use with this apparatus. Recently a number of explosions of oxygen confined in tanks have been reported. This led George S. Rice, Chief Mining Engineer of the Bureau, to begin an investigation of the impurities in oxygen which cause these explosions.

Some criticism of the electrolytical process of making oxygen has been voiced, but Mr. Rice declares that it is not a question of discountenancing the electrolytical or any other process of manufacture, but rather a matter of specifying the amounts of impurities that the oxygen may contain. The Bureau of Mines has found for its own use that the hydrogen contained must be less than two-tenths of 1 per cent and that the nitrogen contained must be less than 2½ per cent.

### GEOLOGISTS TO DO OIL WORK IN CENTRAL AMERICA

Henry Hinds, E. R. Lloyd and D. D. Condit, of the Geological Survey, have been granted a leave of absence for six months to accept employment during this time with the Sinclair Central American Oil Company. They will be engaged in oil investigation in several of the Central American republics. Since exploratory and geological work in that section throws valuable light on the petroleum problem of the coastal plain region of the United States, Director Smith of the Geological Survey is glad that this opportunity for outside work has been offered.

### PURCHASES OF COAL BEING MADE MORE METHODICALLY

Inquiries from manufacturers and other consumers of fuel as to sources of supply of coal and coke are reaching the Geological Survey in greater numbers than ever before. Such an increase in the interest in this particular point is something of a surprise to Survey officials, who are not able to account entirely for the volume of requests of this nature which are being received. The fact that fuel purchases are rapidly being reduced to a more methodical basis, however, is a source of much satisfaction to coal specialists of the Government service.

#### Drawback on Spelter

Drawback has been allowed on spelter manufactured by the Pearlman Co. (Inc.), of Clarksburg, W. Va., wholly with the use of duty-paid ore or with the use of such ore in combination with either ore imported in bond, domestic ore, or both.

# INDIVIDUAL FITNESS OF THE NATION'S MINING ENGINEERS SOUGHT BY DEFENSE COUNCIL

**Bureau of Mines, Cooperating With American Institute of Mining Engineers, Sends Out Blank Asking for Information Which Will Show How Engineer Can Help Country in Case of an Emergency**

During the early months of the war in Europe nearly every nation engaged sacrificed the lives of highly valuable technical men by allowing them to go into the thick of battle. In many cases individuals were sacrificed who were worth to their countries more than the lives of hundreds of men not so well qualified to assist in mobilizing the resources of the country.

In order that the United States may secure the maximum of service from each of her citizens in case of war, efforts are being made by many agencies to classify those who are fitted to take up special duties in which they will be of particular value. As a part of this work the Council of National Defense has requested that a list of all mining engineers be compiled by the Bureau of Mines in cooperation with the American Institute of Mining Engineers. The same request has been made of the Bureau of Mines with regard to the chemists of the country. This work is being undertaken in cooperation with the American Chemical Society.

The following letter, signed by Van H. Manning, director of the Bureau of Mines, and Philip N. Moore, president of the American Institute of Mining Engineers, has been addressed to the mining engineers of America:

"By request of the Council of National Defense, the Bureau of Mines, in cooperation with the American Institute of Mining Engineers, will prepare a classified list of the mining engineers and metallurgists of the United States. Data covering the qualifications, experience and skill of each engineer are desired to determine the line of duty in which he can best serve the country in time of need.

"European experience has shown that nothing is more important in time of war or national emergency than a knowledge of the qualifications and experience of expert technical men. It is, therefore, important, especially at present, that this information be available in the United States.

"You are accordingly requested as a patriotic duty not only to fill out the card which you will receive herewith, but to see that every engineer and metallurgist within your acquaintance receives one and does likewise. Additional cards will be furnished upon request. You will please check only those subjects in which you are expert, especially where you have had actual mining or metallurgical experience. Please return the card promptly, using the inclosed franked en-

velope. The information received will be carefully classified, carded and indexed. Your prompt response to this matter will be very much appreciated."

Accompanying this letter will be a blank on which the following questions are asked:

Name; present address; permanent address; date of birth; where born; where were your parents born; married or single; number of dependents for whose support you are wholly responsible; partially responsible; are you an American citizen; if naturalized, give date; health; eyesight; hearing; bodily disability, nature of; institution where graduated; date of graduation; degree; what foreign language do you speak; in what countries have you had experience and how much; technical societies of which you are a member; please list positions held during the past five years, naming special duties of each; present position, occupation and employer; publications; reports or papers, give titles and where published, or indicate the fields to which you have contributed; in case of emergency, how and where, in your opinion, could you be of most service to this country; present military connections; please check the following kinds of mines in which you have had actual experience, coal, copper, gold and silver, iron, lead, zinc, petroleum, rare metals and other minerals; give character of machine and repair shop experience, if any; state in what metallurgical method you are proficient.

Under the head of "mining and metallurgy" the following questions are asked, with the stipulation that the number of years service as foreman, engineer, superintendent or manager be specified:

Construction (building); construction (machinery); development work; designing and drafting; dike and levee construction; drainage and pumping; dredging; erection of machinery; explosives (mine and quarry); hydraulic mining; prospecting (with boring machines); quarrying; steam shovel mining; surveying mine or topographic; tunnel and shaft work under compressed air; underground mining.

Under the heading of "ore reduction" the length of experience is again called for after the following questions:

Assaying; ore concentration; alloys, ferrous; alloys, nonferrous; aluminum and magnesium; antimony, bismuth and cadmium; chromium and manganese; copper; gold and silver; iron and steel; lead; mercury; nickel



and cobalt; platinum metals; radium and uranium; silicon and titanium; zinc.

### THE SUPREME COURT'S DECISION ON THE ADAMSON LAW

Washington Times.

Chief Justice White's luminous opinion on the constitutionality of the Adamson law, embodying the decision of the majority of the court, is another assertion of the practically limitless power of Congress over the whole subject of interstate commerce. A good many cobwebs are brushed away in the rendering of this decision. The contention that the law was one regulating the hours of labor only, and the argument that it was a wage question pure and simple, are both dismissed with the remark that both contentions are right and both are wrong, in so far as they are mutually exclusive. The power of Congress in the matter of fixing the hours of labor is undisputed.

The question of fixing wages was a more difficult one to determine. The learned Chief Justice seems to place the right in this case on the emergency which called for the exercise of congressional power. Employers and employes have failed to agree. There was no standard by which both could be guided in the fixing of wages. Therefore, considering "the entire interruption of interstate commerce which was threatened, and the infinite injury to the public interest which was imminent, it would seem inevitably to result that the power to regulate necessarily obtained, and was subject to be applied to an extent necessary to provide a remedy for the situation." The theory was brushed aside as absurd that "the existence of a public right and the public power to preserve it was wholly under the control of the private right to establish a standard by agreement." Also the theory that emergency cannot afford a reason for the exertion of a power of Congress.

The decision is a far-reaching one. Justice McReynolds, in bowing to the will of the majority, though dissenting, declares that the majority decision gives Congress authority to fix maximum and minimum wages of the trainmen, and also the power "to require compulsory arbitration of labor disputes and to take measures effectively to protect the free flow of commerce against any combination whether of operatives, owners or strangers."

The whole matter rests upon the foundation principle that "the business of a common carrier by rail is in a sense a public business."

#### OTHER COMMENT

Washington Star.

The Supreme Court decision, affirming the constitutionality of the Adamson law, is a

victory for the brotherhoods for today. It is a greater victory for the general public for all the tomorrows until, if ever, the decision is reversed.

For this decision is interpreted to mean that Congress has the constitutional power to constitute itself a court of compulsory arbitration and to prevent by legislative regulation of wages and working conditions the national paralysis of a nation-wide railroad strike.

In effect the American people, hitherto disregarded in the clash between the railroads and their employes and suffering more than either of the combatants from this clash, have been made potentially through their representatives in Congress the tribunal to arbitrate these disputes.

The public interest, hitherto unconsidered in these battles, may hereafter, if Congress wills, receive primary consideration.

May Congress exercise this great power with courage and wisdom!

#### Asked to Aid Mining Congress

At a recent meeting of the Alaska Bureau of the Chamber of Commerce of Seattle, B. F. Millard called the attention of that body to the work being done by the American Mining Congress, and suggested to the members that they take a greater interest in the work being done by the Mining Congress.

#### EXAMINATION SOON FOR JUNIOR MINING ENGINEER

Work continues to be handicapped in the Geological Survey and Bureau of Mines by inability to secure some classes of technical assistants. The demand for technical men has pushed salaries far beyond those that are being paid by the Government, and as these high salaries are being accompanied in many cases by long-time and favorable contracts the number of men leaving the Government service is increasing. The greatest difficulty is being experienced in securing the grade of men necessary to fill their places. In most cases there are few persons on the eligible list of the Civil Service Commission. Usually communications to men on this list develop the fact that they are not willing to accept the salaries which the bureaus can afford.

There always, heretofore, has been one list which was well filled. This is the eligible list for the position of junior mining engineer. It is this examination which usually appeals to young men on leaving college. Even this list, however, has become sadly depleted and the Civil Service Commission will announce shortly examinations throughout the country in the hope of stocking up the list of eligibles for the position of junior mining engineer.

**GOVERNMENT EXPERTS WELL  
KNOWN TO MINING MEN**



**DONNELL FOSTER HEWETT**  
Geologist

Donnel Foster Hewett was born at Irwin, Pa., June 24, 1881. He attended public schools in Washington, D. C., from 1886 to 1895. He was a student in the Georgia School of Technology, in Atlanta, Ga., from 1895-1897. Mr. Hewett was a student in Lehigh University from 1898-1902. His degree of metallurgical engineer from that institution was obtained in 1902. He continued at the university as an assistant in metallurgy and mineralogy for a year.

In 1903, Mr. Hewett entered the employ of the Pittsburgh Testing Laboratory as mining engineer. During the period from 1903-1909, he examined metalliferous mines in the western States, as well as in Ontario, Canada; Chihuahua, Sonora, Sinaloa, Durango, and Jalisco, Mexico; and in Peru. From 1909 to 1911, he was a graduated student in geology at Yale University. Mr. Hewett, in 1911, entered the United States Geological Survey as junior geologist, and worked for the field seasons of 1911, 1912, and 1913 on the areal and economic geology of Oregon Basin and Grass Creek quadrangles, and Bighorn Basin,

in Wyoming. These quadrangles contain important resources of coal, oil, and gas. In 1914 and 1915, he worked with J. F. Pardee on the areal and economic geology of the Sumpter quadrangle of Oregon. The area contains most of the productive gold mines of eastern Oregon. Preliminary reports on all of these areas have been issued or are in process of publication. In 1916, Mr. Hewett examined vanadium mines in Peru.

From 1902 to date, he has written the chapters on manganese production for the report on mineral resources. In 1913, he was promoted to the rank of associate geologist, and is now a member of the Section of Western Areal Geology.

**TRADE COMMISSION TAKES  
REVOLUTIONARY ACTION**

The Federal Trade Commission, March 14, notified the country's leading anthracite coal producers that any failure to grant the usual spring price reductions cannot be justified by claims of increased cost of production. The commission has heard, the notice says, that producers intend to withdraw or reduce the regular seasonal discounts, on the ground of increased mining costs.

In its inquiry into the cost of mining anthracite, the report on which soon will be issued, the commission has obtained detailed information on the costs of companies which mined in 1916 about 75 per cent of the total production of anthracite. "This information," says the commission, "obtained directly from the records of the companies referred to, indicates no increase in average cost in the last four months of 1916, and further indicates an actual decrease of cost in the case of some of the companies whose cost of production is high.

"Judging from the tonnage produced in January, 1917, there is no reason to believe that costs thus far in 1917 will materially change the average shown by the figures compiled from September to December, 1916. Therefore it is the opinion of the commission that further increase in circular prices this spring, by failure to grant the customary discounts, cannot be justified on the basis of increased cost.

"The commission makes this statement in advance of the forthcoming report, because it is a matter of vital interest to the public that no unjustifiable increase in price be made.

"This statement does not refer to increases in circular prices of all anthracite in May, 1916, nor to the panic prices which have prevailed on part of the tonnage this fall and winter, concerning which the commission will make a report in the near future. The cost data already compiled by the commission, however, are conclusive against price increases this spring."



## RENO CELEBRATES SELECTION AS MINE RESCUE STATION

Seated comfortably in his home in Washington, March 10, Van H. Manning, Director of the Bureau of Mines, addressed a distinguished audience nearly 3,000 miles away, at Reno, Nev. The occasion was the annual engineering day celebration of the University of Nevada, with the added feature of a celebration of the selection of Reno as the general headquarters for one of the new mine-safety stations of the bureau with a mine-rescue car to respond to disasters and to teach the miners first-aid and rescue work.

The Governor of Nevada, members of the State legislature and several men prominent in the mining industry were present at this transcontinental telephony demonstration, which was arranged to take place at 9 o'clock, Nevada time, corresponding to midnight, eastern time.

Exactly upon the stroke of 12 Mr. Manning was notified by Prof. J. G. Scrugham, dean of the College of Engineering of the University of Nevada, that Washington had the right of way over the wires across the continent and that the audience, each member of which had a receiver to his ear, was ready for the greetings from the director of the Bureau.

Mr. Manning said: "The Bureau of Mines deeply appreciates this kind invitation to extend its more cordial greetings to the citizens of the great mining State of Nevada. We have been watching with the keenest interest from year to year the phenomenal increases in your mineral production and wish to extend our heartiest congratulations to a State that can increase its mineral production from \$34,000,000 in the year 1915 to \$52,000,000 in the year 1916, an increase of \$18,000,000, or about 52 per cent. The Bureau of Mines is interested in a State which can show mining dividends in one year of more than \$11,000,000. I venture to say that very few States can show a per capita mineral production of nearly \$500 and a per capita dividend of more than \$100.

"We have watched with increasing admiration the modern development of your methods of mining and the many extensions to your mines and mills.

"The Bureau of Mines considers it a privilege, after planning for several years to extend its work more broadly through the metalliferous mining districts of the United States to be able to place in your State, on April 1, a new all-steel mine-safety car, with headquarters at Reno. We have always felt that with the development of mining must come the development of safety. Safety first properly applied means a lessening death roll, a minimum of physical suffering and mental anguish, greater prosperity to the mining industry, and consequently bigger dividends.

"This mine-safety car will be at your service

for greater safety. It will carry a mining engineer, a mine surgeon, a miner trained in rescue work, and a miner trained in first aid. Their collective duties shall be to cooperate with the miners, operators and State officials of Nevada and the mining districts of the adjoining States, as well as with the faculty and graduates of the Nevada School of Mines, in furthering safety, sanitation and health in your mines and mining communities.

"I firmly believe that under the cooperation of all concerned in the mining industry—and none is more concerned than the citizens of Nevada—real progress will be made to make mining in the districts surrounding Reno as safe as human agencies can make a naturally hazardous calling.

"On behalf of the bureau and the Secretary of the Interior, I wish to give thanks for the hearty greetings extended to the bureau. I am sure it will be an inspiration to all in the bettering of conditions in the great mining industry."

## TELLS OF CONTRIBUTIONS OF SURVEY TO PUBLIC SERVICE

In an address to be delivered before the Men's Forum of Binghamton, N. Y., April 1, Geo. Otis Smith, the director of the U. S. Geological Survey, will discuss the contributions of a scientific bureau to the public service. He will show that there is a broader idea now than forty years ago; that the natural wealth of the nation is to be used for benefit of the many and not the few; that the public service idea now is shared by corporations, but that public servants must lead in this work for the people.

He also will point out that the United States Geological Survey is the largest organization of its kind in the world and that the investigation of the natural resources of the United States includes topographic mapping of the surface, geological examination of rock formations and ore deposits, measurement of streams, classification of public lands, and the publication of results with the distribution of the information to the public.

The outlook of today he will say includes full utilization of our country's resources, wisely rather than wastefully; a national prosperity for centuries through present efficiency. The lessons of the past two and a half years, with respect to a larger measure of industrial independence, will be brought out.

## Pan-American Book Out

The official publication telling of the second Pan-American Scientific Congress, which was held in Washington the beginning of last year, has been published in Spanish and is being distributed in Latin America.

# PROGRESS IN MINERAL INDUSTRIES SINCE WAR BEGAN TO BE SHOWN IN BULLETIN

Geological Survey Preparing Extensive Publication Which Will Show What Has  
Been Accomplished Under Stress of War Market and Decreased  
Importations—David White Discusses Forthcoming Work

A few weeks after the opening of the European War the Geological Survey published Bulletin 599. That publication outlined what might be expected of the United States in the developing of industrial independence. A new bulletin now is being written which will show what has been accomplished toward this end. Each mineral affected by war conditions is to be the subject of a review by the individual geologist who is regularly assigned to the study of that particular mineral. In this way the Survey will be able to gather into one volume the best thought and the latest information at the disposal of the Federal government.

The new bulletin will show the present studies of mineral production and will give much information as to the development which has taken place in the mineral industries since the outbreak of the war. Special attention will be given to the experience which has been gained since that time. Emphasis will be placed upon the demands and conditions which the United States will have to face in case it is called upon to enter into active prosecution of hostilities.

David White, chief geologist of the U. S. Geological Survey, in discussing the new bulletin, says:

"The Director contemplates the publication of a review of the present status of mineral production and the mineral industries from the standpoint of the developments witnessed and the experience gained since that forecast was printed just after the outbreak of the war, and with special reference, as is now most timely, to the conditions and demands that will confront the country should it become engaged in war.

"Bulletin 599 is predictive and is based on previous development in the mineral industries and the status at the time of our information as to latent resources and mining and metallurgical progress in this country. Obviously the new bulletin will start from the date of writing 599 and taking the estimates and predictions of the latter as the text make note of what has actually been accomplished under the extraordinary stimulus of foreign war markets on the one hand and of restricted or even totally obstructed importations on the other. It would seem appropriate that such a publication might present a brief review of the conditions controlling recent developments, of what has been accomplished, and how it was brought about. This notation of the present drift in the respective industries is essential to the discussion of the future and to the perspective grasp of the great problem which is the real motive of

the new bulletin, namely, the ability and the extent to which the mineral industries can meet possible superimposed demands of war in this country, both with and without export of certain commodities for foreign war consumption. It would be germane to discuss at this time the capacities of the war mineral industries, their probable or real limits as to mining and as to treatment (smelting, coking, refining); the rate of expansion under pressure as estimated on the basis of what has been achieved since September, 1914; the adequacy of the mineral reserves and the possible development of new reserves of special type to meet greater demands or replace importation; the need for further information as to raw materials, and the mineral problems and exigencies which may probably confront the country in case of war.

"The Director instructs that each mineral subject concerned with the war conditions be treated by its responsible geologist and under his own name. Most of the articles will be prepared from information already in the minds or close at the hands of the respective authors. The preparation of the bulletin should be viewed as emergency matter and as representing the Survey's best information at the present moment."

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## CARRANZA SAYS HE WILL NOT CONFISCATE MINES

Ambassador Fletcher, at Mexico City, telegraphs that General Carranza has informed him that mine owners who are unable to operate their properties in Mexico should apply for an extension of the time within which to resume work, and that he assured the ambassador that in all cases where the conditions were such as to make it impossible to resume work an extension would be allowed. General Carranza further said it was not his government's intention to confiscate mining property, but that it would proceed according to the dictates of equity and justice.

The ambassador suggests that mine owners who are unable to operate and who have not applied for an extension should immediately make application for such extension. The applications should be made in the Spanish language, to the Minister of Fomento, Mexico City, giving title, size, location, number, and name of the property, together with the reasons for failure to work the property. Each application or petition should be accompanied by the last tax receipt and should bear a 50-cent Mexican documentary stamp.



### **NEW MINING GLOSSARY TO CONTAIN 30,000 WORDS**

Probably as many as 30,000 special words applying peculiarly to the mining industry will be contained in the new glossary of mining terms which is being compiled by the Bureau of Mines. The work was started two years ago, but as the demand for it has become more evident, every effort is being made to hurry it to a conclusion. Even in view of the additional time being expended on this work there is probably a year's compilation ahead. The idea of furnishing the mining industries with an unabridged glossary originated with A. H. Fay, statistician of the bureau.

### **NEW MAP OF ANTHRACITE REGION TO BE ISSUED**

A very important addition to the supply of information with regard to the anthracite industry is soon to be published. The United States Geological Survey is cooperating with the anthracite bureau of information in the publishing of a bulletin which will contain an elaborate map of the anthracite region of Pennsylvania. The map will show mines, breakers, limits of seams and a great volume of other information which thus will be presented graphically. The map will be accompanied by a particularly instructive text.

### **BUREAU OF MINES STUDYING MERIT RATING STANDARDS**

Merit rating standards are being studied by the officials of the Bureau of Mines with the hope that a system which will be practicable in every way will be devised. It is believed that ratings on a percentage basis can be arranged so as to permit of uniform work in different mines. The general enactment of workmen's compensation laws and the increasing amount of insurance being written is making imperative the development of a system which will permit of the standardization of mine ratings.

#### **Safety First Calendar.**

An illustrated calendar has been issued by the Kingston Coal Company, of Kingston, Pa, and distributed to all its employes asking the cooperation of each in the effort to prevent accidents and to further the welfare and civic uplift of the communities in which they reside. Each page of the calendar contains a number of abstracts of the safety measures of the mine law, and this presentation in attractive form, together with interesting views in and about the mines, it is believed by Mr. F. E. Zerbey, the general manager of the company, will have more effect than the printed abstracts posted about the mine, as provided by the anthracite mine law.

### **USEFULNESS OF MINE-RESCUE TRAINING DEMONSTRATED**

Safety in mines requires, in addition to precautions to prevent accidents, provision for emergencies in case of mine explosions, fires, or accidents. The presence of deadly gases makes it especially dangerous for men to enter a mine, unless they are equipped with breathing apparatus or proceed with the fresh-air current. After the recent mine explosion at the Wilburton mine, Wilburton, Okla., in which two shot firers were entombed, four rescuers attempted to enter the mine on the return air side and proceeded less than 100 feet when they were overcome, and in attempting to rescue these four men eight others met with the same fate. The twelve men were finally brought to the surface in an unconscious condition and by prompt and efficient artificial respiration all except one were revived. These men were revived by miners, all of whom had previously received first-aid training from Bureau of Mine instructors.

The miners who were at this scene, and especially those overcome, are outspoken in their appreciation of the efficacy of the first aid rendered and express a determination to familiarize themselves with first-aid methods.

The utility of formulating rules and providing for emergencies is not so evident when a mine is working satisfactorily as it is after the mine has exploded.

In a recent disaster at an Alabama coal mine, in which several men were killed, a rescue party equipped with breathing apparatus reached the mine about two hours after the explosion. Nearly all of the bodies were recovered by these men, it being impossible for persons not wearing apparatus to enter the mine workings. Some of the bodies were still limp when recovered and an effort was made to revive these persons, but without success. This shows the usefulness of breathing apparatus at mine disasters when men trained in the use of apparatus are available and the apparatus is in good condition. Some of the men who took part in this work were being trained at the time of the disaster. One of the State mine inspectors wore apparatus and participated in the rescue work; another acted as a reserve and administered artificial respiration.

#### **Honey Boy Company Floated.**

B. F. Millard has financed the Honey Boy Mining Company. The property lies 22 miles from Cordova, Alaska. The vein is 125 feet wide. It is near salt water, 2 miles from the Copper River Railroad. One hundred-ton barges can be loaded at Cordova and towed by launch to the property. There is ample water power available.

# ACCIDENTS IN METAL MINES ARE TO RECEIVE ADDITIONAL ATTENTION FROM GOVERNMENT

Bureau of Mines Appoints Engineer Who Will Make Special Study of Safety in Metalliferous Operations—B. O. Pickard, of Phoenix, to be in Direct Charge of Work

Accidents in metal mines are to receive closer attention in the future by the Bureau of Mines, and B. O. Pickard, of Phoenix, Arizona, has been appointed safety engineer of the bureau to give special attention to this work. Since the foundation of the Bureau of Mines, every effort has been made to extend its work in the metal mining industries. From the fact that it was thought that many of the problems concerning the coal industry were more urgent, this part of the work was provided for first by Congress. It has been uphill work to secure additional appropriations for the important extensions of the work to the metal mining industry. While it has been possible to conduct some very important metalliferous work, almost from the outset of the bureau's activities the lack of appropriations has been a serious handicap to the bringing of the metal mining work up to the same standard of excellence which has characterized the work on coal mining problems.

The appointment of Mr. Pickard and his assignment to accident problems in metal mines marks an important addition in the bureau's efforts to be of assistance to the metal mines of the country. Congress also is showing a keen appreciation of the work the bureau has done in the coal mining industry and appropriations for similar work among the metal mines apparently will be easy to obtain in the future.

Mr. Pickard will be in charge of this work under the immediate direction of D. J. Parker, the mine safety engineer of the bureau. Mr. Parker will specialize in similar work in coal mines.

## LOGIC OF PREPAREDNESS SHOWN BY NOTED ENGINEER

The nineteenth annual session of the Canadian Mining Institute was held at the Ritz-Carlton Hotel, in Montreal, March 7-9.

The morning of the 7th was devoted to papers and discussions on "National and Industrial Preparedness." In the afternoon the principal subjects were "Magnesite," "Potash," and "Molybdenum."

Wednesday evening Dr. Henry M. Payne, of New York, and Mr. H. W. DuBois, of Philadelphia, gave stereopticon talks, and Dr. Alfred C. Lane, of Tufts College, Massachusetts, delivered the feature address of

the session, entitled "Preparedness Among Animals." This paper was so unique and evidenced such careful research work that Dr. Lane was the center of a group of interested interrogators throughout the session.

Starting with the amœba, he traced the evolution of animal life through the various geologic periods, showing diagrams of the internal structures in order to make plain that that organism with the head or best central government, the best cooperating cells and organs, and the quickest to see danger and to act on what it saw, was the one best prepared for life's battle. He summed up the factors of preparedness, either animal or national, as: (1) Alertness, (2) activity, (3) pre-vision or foresight, (4) provision, (5) internal cooperation, (6) external cooperation, (7) centralization of the vital organs and nervous system. He showed how various diseases start in the body and similar diseases form in a nation from an analogous disturbance, interrupting the cooperation between human units. He stated that the use of poisonous gases for defense had been introduced by the skunk, the barbed-wire defense by the porcupine, and the domed turret by the turtle.

The whole address was so startling and so clear that doubt hardly could remain in the minds of the audience regarding the logic of national preparedness. In response to the claim of the pacifist, that military training breeds war-like tendency, the doctor asked his hearers if being a butcher produced human murderers.

The Thursday sessions were given over to electrolytic zinc processes, iron and clay working, and flotation.

Thursday evening was the annual banquet, at which a committee of seven, representing the Mining and Metallurgical Society of America, presented the gold medal of that society "for distinguished service" to Mr. Edward P. Matheson. The presentation was made by Dr. W. R. Ingalls. The American Institute of Mining Engineers was represented by President P. N. Moore; the Institution of Mines and Metallurgy of Great Britain by Mr. Edgar Rickard, and the American Mining Congress by Dr. Henry M. Payne.

Friday was devoted to visits to ammunition plants in the vicinity of Montreal and a luncheon at the works of the Dominion Bridge Company.



**GOVERNMENT EXPERTS WELL  
KNOWN TO MINING MEN**



**G. F. LOUGHLIN**  
Geologist

Gerald Francis Loughlin was born in Hyde Park, Mass., December 11, 1880. He graduated from the Boston Latin School in 1898; received the S.B. degree at Massachusetts Institute of Technology in 1903; Ph.D. at Yale in 1906. From 1906 to 1912, he was instructor in economic geology and petrology at Massachusetts Institute of Technology, devoting his summers largely to work for the United States and the Connecticut State Geological Surveys. Since 1912 he has been permanently connected with the United States Geological Survey, devoting most of his time to the study of metalliferous deposits. Since 1914 he has also had charge of investigations related to the stone and lime industries. His principal work in mining regions includes detailed studies of the geology and ore deposits of the Tintic district, Utah; of the Magdalena district, N. Mex., and the oxidized zinc ores of Leadville, Colo. He has made briefer studies of several smaller districts in Utah; of the Eureka, Nevada, and the Ochoco (Howard) district, Oregon.

**METTEGANG RECORDER  
GIVING SATISFACTION**

Excellent results are being obtained by the Bureau of Mines in the use of the Mettegang mechanical recorder for measuring the rate of detonation of explosives. The recorder is being used by the Bureau of Mines at Pittsburgh.

**SINGLE BUREAUS GET MORE  
AID THAN ALL MINING**

"In the Department of Agriculture single bureaus, such as the Bureau of Animal Industry, the Bureau of Plant Industry, the Forest Service, the States Relations Service and Meat Inspection, each received more money than is allotted by the Federal Government for all mining." (Extract from address of Van H. Manning at the Mining Congress Convention.)

**Decides in Favor of Mining Company.**

In rendering a decision on a grievance brought by certain employes of the Nesquehoning colliery of the Lehigh Coal & Navigation Company before the Board of Conciliation, and which was referred to him as umpire, Dr. Charles P. Neill holds that the rate sheets are not absolutely unquestionable and that a rate which has been in effect and recognized as standard is to be accepted, whether it appears upon the rate sheet or not.

The umpire held that the company had fully and **conclusively** established its contention that the two-thirds rate was an established rate at the colliery, going back even prior to the date of the award of the Anthracite Strike Commission, and the grievance, therefore, was not sustained.

**New Book on Briquetting Published**

A valuable publication has just come from the presses of the J. B. Lippincott Company, of Philadelphia, in "A Hand Book of Briquetting," by G. Frank. Mr. Frank is the professor of mining and briquetting in the Kgl. Bergakademie, Berlin. The translation was made by Fred C. A. H. Lantsberry, head of the Birmingham Small Arms Company's laboratory. With the increase in the demand for briquettes, this work will appeal to all those who are interested in the technical side of this industry.

**Canadian Institute Issues Report**

The transactions of the Canadian Mining Institute for 1916 have been printed and are being distributed. Arthur A. Cole is the president of the Canadian Mining Institute, and H. Mortimer-Lamb is the secretary-treasurer of the organization. The work contains a number of important papers by engineers of international reputation.

# WORK TO BE DONE AT SEATTLE STATION OF BUREAU OF MINES OUTLINED IN DETAIL

## Use of Electricity in Recovery of Metals, Study of Coals and the General Metalliferous Problems of the Northwest to be Taken up in Comprehensive Way, Declares Dorsey A. Lyon

Work at the mining experiment station at Seattle is to be divided into three main divisions. Dorsey A. Lyon, the superintendent of the station, classifies the work as follows:

1. Determining how far it may be profitable, and feasible, to use electricity in the recovery of metals from their ores by electrothermic and electrolytic processes

2. A study of the coals of the Northwest and of the west and southwest coast of Alaska, for the purpose of (a) determining how they may be mined with the least possible waste, and (b) the beneficiation of low-grade coals so as to render them suitable for fuels for domestic and industrial use.

3. A study of the problems connected with the treatment of the ores of the Northwest and of the west and southwest coast of Alaska, in so far as such problems may differ from those now being studied at other stations of the bureau.

Since national interest is being manifested in the conduct of the new mining experiment stations, officials of the Bureau of Mines are particularly anxious that the public have a clear outline of the work. It is expected that similarly concise statements of the work at the other mining experiment stations will be forthcoming shortly.

The greatest interest is evident in the use of electricity in the treatment of ores. For this reason the work at Seattle is certain to be watched with the greatest interest by the entire metallurgical industry.

The impression seems to have been gained that the Seattle station was to be devoted entirely to metalliferous work. Since Mr. Lyon puts the coal work of the Seattle station in second place, it can be seen that this portion of the station's activities are not to be neglected. The western portion of Alaska is included in the territory to be surveyed by the Seattle station, and the coal mining industry in that portion of the territory is certain to develop into a very important one. On the development of the coals of western Alaska the prosperity of a considerable portion of the peninsula depends.

George S. Rice, Chief Mining Engineer of the Bureau of Mines, is very much encouraged by the results of laboratory work conducted by Prof. E. J. Babcock on coals from the Nenana field. Professor Babcock has demonstrated that this coal can be briquetted successfully. The briquettes which he has made have been found to be

equal to the good grades of steam coal. There is every reason to think that the laboratory tests were conducted under such conditions as to insure the production of briquettes on a commercial scale. Owing to the prohibitive prices to which wood has risen in eastern Alaska, it is essential to the continuance of many mining operations that the Nenana coals and lignites be made available for fuel. In the light of Professor Babcock's work, Mr. Rice is very hopeful that one of the most serious problems that has confronted the mining industry in a very highly mineralized territory soon will have been solved.

The Pacific Northwest Mining and Metallurgical Experiment Station, Bureau of Mines, Department of the Interior, has by this time been organized and commenced work on its various problems. The personnel of the staff is as follows:

Dorsey A. Lyon, metallurgist and superintendent of station.

George Watkin Evans, coal mining engineer.

Francis C. Ryan, electrometallurgist.

Harlan A. Depew, chemist.

Union B. White, clerk.

Superintendent Lyon, in outlining the work for this station, said: "At the present time the majority of our metallurgical processes are carried out in some form of a combustion furnace, which means that carbon in some form has to be burned. Therefore, the widening of the scope of those metallurgical processes in which the electric current is used, either for its thermal effect or for the electro-deposition of metals, means that our coal and oil resources will be conserved, for one of the greatest resources of the country is its water power. This water power is not depleted by use, but may be used continuously as long as the mountains stand. Therefore, one of the principal lines of investigation which will be taken up at the Pacific Northwest station will be a study of electrometallurgical processes, for the purpose of determining to what extent it may be possible to commercially apply such processes, either electrothermic or electrolytic, to the treatment of the major nonferrous metals. It may be that special problems will also be taken up in connection with the production of iron, steel and other alloys.

"Another line of investigation that will be taken up in connection with the work of the station at Seattle will be a study of the methods used on the Pacific coast for mining coal, with the idea of devising ways and means of



preventing the waste of coal which may at present take place in mining.

"It is hoped, with the help and cooperation of the coal operators of the State of Washington, to also install a coal-testing laboratory which will permit of the carrying on of investigations having for their object the beneficiation of the low grade, and at present practically valueless, coals which are found in the Pacific Northwest States.

"It is also hoped that ways and means may be found of taking up cooperative work with various industrial concerns, as for example the steamship companies, the railroad companies, etc., and with the department of mechanical engineering of the University of Washington, as regards the proper utilization of low-grade coals, and of those coals which may be beneficiated as a result of washing, etc.

#### COOPERATIVE WORK WITH THE UNIVERSITY OF IDAHO

"As a part of its work on the mining and metallurgical problems of the Pacific Northwest, the bureau has entered into a cooperative agreement with the University of Idaho, whereby an ore-dressing experiment station is to be located at Moscow, Idaho, and cooperative work carried on with the mining and metallurgical departments of the University of Idaho. In this work the problems met with in the treating of lead, silver, and zinc ores of the Coeur d'Alene type will receive special attention, as will the problems on ore dressing which may be encountered in other mining districts of the State. Mr. Thomas Varley, who for several years has been in charge of the ore-testing work for the Federal Mining Company in various parts of the United States and Mexico, and who has only recently entered the employ of the bureau, will have charge of the bureau's work at Moscow, and will work in cooperation with the departments of mining and metallurgy of the University of Idaho.

"As a part of the cooperative work which is to be undertaken in Idaho, a survey of the many mining districts throughout the State, of which there are over a hundred, will be undertaken during the coming spring and summer, in order to determine what metallurgical problems demand first consideration.

#### COOPERATIVE WORK WITH THE OREGON BUREAU OF MINES AND GEOLOGY

"The bureau has entered into a cooperative agreement with the Oregon Bureau of Mines and Geology, whereby it will assist that bureau in dealing with the problems which present themselves to the mining interests of that State. Prof. Will H. Coghill, professor of metallurgy at the Oregon State Agricultural College, will represent the bureau as consulting metallurgist in this cooperative work.

"One of the first things that will be undertaken in connection with this work will be a grouping of the various kinds of ores which are typical of the various mining districts of

the State, for the purpose of determining, as far as possible, the suitability of present-day metallurgical processes to the treatment of these ores, and especially as to whether or not those which have to be concentrated before shipment can be effectively and efficiently treated by the flotation process.

"The station will also make an effort to be of value to the mines of southeastern Alaska and to these of Montana."

#### SHIELDS WATER POWER BILL DIES WITH CONGRESS

Unable to compose differences of opinion upon at least three points which were regarded as fundamental, the Senate and House conferees on the Shields water power bill were discharged. This action killed the Shields water power bill, as well as the bill which Representative Adamson sponsored in the House.

In a brief statement Representative Adamson, of Georgia, chairman of the House Committee on Interstate and Foreign Commerce, summed up the differences which the Senate and House conferees were unable to bridge in order to arrive at an agreement. He said:

"There were three points of difference. First, the conferees of the Senate insisted on the classification of grantees. The House conferees insisted that any man who could raise the money might build a dam by complying with the provisions and terms of the law.

"Second, the House insisted on the right of the Government to impose an arbitrary charge with the power of the Government to change that charge at stated periods without the consent of the grantee. The Senate conferees objected to any charge in money, but maintained that the matter ought to be left to the States in which the dams might be located.

"Third, the Senate conferees insisted that Congress grant consent in this act for the Secretary of War to pass on all applications without further action on the part of Congress. The House conferees insisted that Congress should pass on each separate proposition.

"But for these three differences the conferees could easily have agreed.

"There was much merit in both bills. Both bills contained complete regulatory provisions and both provided amply for full protection of the public. But neither body would yield on the three propositions nor could any satisfactory compromise be reached. So, after five conference meetings, the matter was abandoned as hopeless."

The conferees on the part of the Senate were Senators Shields, Bankhead and Nelson, and the House conferees were Representatives Adamson, Sims and Esch.

The Shields water power bill passed the Senate by over a 2 to 1 majority and its enactment would have resulted in an impetus to industrial development in water power States on a scale now impossible without the utilization of the water power up to this time unharnessed and going to waste.

# SEVERAL SMALL NITRATE PLANTS ARE LIKELY TO PRECEDE LARGER STRUCTURE, IS BELIEF

Interdepartmental Board Returns from Hearings as to Location of Government Plant—Impressed with Resources of South—George Otis Smith and Dr. Chas. L. Parsons Represent Mineral End of Investigation

Hearings have been conducted in the places being considered as the possible site for the Federal nitrate plant. These hearings were before an inter-departmental board composed of the following: Secretaries of the Interior, Agriculture, and War; General Black, chief of the engineer corps of the army; George Otis Smith, director of the U. S. Geological Survey; Dr. Chas. L. Parsons, head of the division of mine technology of the Bureau of Mines; Colonel Keller, of the engineer corps; Colonel Wheeler, of the division of ordnance; Oscar C. Merrill, of the forest service, and J. C. Caruthers, of the nitrate experimental laboratory.

Hearings were conducted at Columbia, S. C., Augusta, Ga., Atlanta, Birmingham, Tuscaloosa, Nashville, Louisville, and Wheeling, W. Va. In addition a day's trip was made on the Tennessee River between Decatur and Florence, Ala. A visit was made to the phosphate rock district near Mt. Pleasant, Tenn. The board inspected the by-product coke ovens and the steel plants at Ensley, Ala., and the by-product plant at Holt, Ala., on the Black Warrior River.

The new steam-electric plant at Beech Bottom near Wheeling, W. Va., also was visited.

The mineral resources of the regions represented at the hearings were presented fully by geologists and mining men. Hydro-electric data were presented by engineers. Each member of the board is thoroughly impressed with the richness of the States visited in those mineral resources essential to the establishment of a large and varied electro-chemical industry.

A coal operator who spoke from the fullness of practical experience is said to have been the best witness who appeared during the entire trip.

Secretary Lane expressed himself as being confident that this nitrate development is going to be in the South regardless of the particular site or sites which may be selected for the Government nitrate plant.

It is believed by some in Washington that several small nitrate plants will be established first with the idea of developing from practical experience whether it is practicable to use one large plant or whether it will be best to have nitrates developed at a number of smaller plants.

Dr. Parsons and Dr. Smith are in charge of the mineral portion of the investigation.

## Takes Over New Claims

The Granite Gold Mining Company, of Alaska, has taken over four adjoining claims,

which adds materially to the old company and probably insures its working for many years.

## NEW PLANT TO FURNISH 1,000 TONS OF POTASH MONTHLY

A most important addition to the potash supply of the United States comes with the development of a new field of production at Searles Marsh, in the extreme northwest section of San Bernardino County, California, not far from the famous Death Valley country. Secretary Franklin K. Lane, of the Department of the Interior, is in receipt of information announcing that a large modern potash plant has just been completed by the Pacific Coast Borax and the Solvay Process companies, and that operations will be begun about the first of the month.

It is estimated that the output will be about 1,000 tons per month of muriate of potash, 80 per cent or better pure potash. A new process for the refinement of the raw product has been solved by the two companies, and is reported to be most satisfactorily successful. The new field is included in about 1,500 acres of patented land owned by the interested concerns, so that there are no obstacles to the conduct of operations once the machinery is started. Railroad facilities have been extended to the field and the owners announce that they are "absolutely confident" they will be turning out the tonnage stated.

The operation of this new plant may be expected to arouse wider interest in the development of such industry in this country. This product is mainly used for fertilizing purposes. Heretofore the main production came from Germany, but since the European War this supply has been cut off. Since the outbreak of hostilities, the price has risen from \$40 to about \$400 per ton.

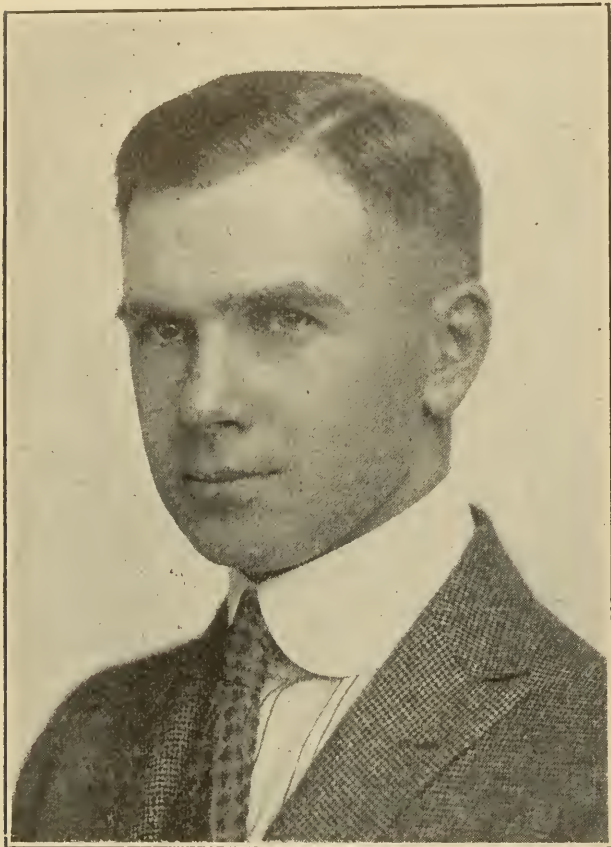
## LIMESTONE BELT AS A VEIN

A stratum of limestone through which a mineral streak containing ore bodies can be traced and with overlying and underlying beds of quartzite marking its limits and that can be followed on its bed through a network of openings from the apex to certain disputed ore bodies, is a vein within the meaning of the United States Statutes granting extralateral rights.

Wall vs. United States Mining Company, 232 Federal, 613, p. 615.



### GOVERNMENT EXPERTS WELL KNOWN TO MINING MEN



E. K. SOPER  
Metallurgist

E. K. Soper, recently appointed consulting metallurgist of the Bureau of Mines, is a graduate of the geology and mining department of Stanford University. He took graduate study in economic geology at Cornell University and at the University of Minnesota. He received the degree of M.A. at the University of Minnesota, where he also completed the work for the degree of Ph.D. Mr. Soper was for two years a member of the faculty of Cornell University. He served as instructor of economic geology. He was for four years a member of the faculty of the University of Minnesota, and was three years on the Minnesota geological survey. Mr. Soper served as a geologist for the American Smelting and Refining Company in Mexico.

For the past two years Mr. Soper has been the head of the department of mining engineering of the University of Idaho. He is well known to mining men, as he has made numerous examinations of mines and mineral lands in California, Colorado, Minnesota, Michigan, Wisconsin, North Dakota, Montana, Manitoba, Alberta and Idaho. He is a

member of the American Institute of Mining Engineers and was Idaho's delegate to the 1916 convention of the American Mining Congress at Chicago. He is the author or joint author of several bulletins of the Minnesota Geological Survey and of numerous articles in technical journals.

### Explosion Tests Made.

In two explosion tests at the experimental mine, in which the mixture of coal dust and shale dust used was the same in each case, ignition was obtained when the dust was distributed one-third on the cross shelves, one-third on the side shelves, and one-third on the floor; but was not obtained when all the dust was placed on the cross shelves and side shelves with none on the floor. The total loading in each case was two pounds of coal per foot of entry.

In tests with coal from the "E" seam, Cambria County, Pa., a mixture of 60 per cent 20-mesh shale and 40 per cent 20-mesh coal, 10 per cent of which would pass through 200-mesh, would not propagate an explosion started in a 50-foot zone of pulverized Pittsburgh coal dust, with no gas in the ventilating current; but would do so with 1 per cent of gas in the air. A mixture of 60 per cent pulverized shale and 40 per cent pulverized coal propagated an explosion.

### SURVEY OF THE MINERAL RESOURCES OF EAST TO BE MADE

A survey of the mineral resources of the Far East, including China and Siberia, will be undertaken this spring by the Bureau of Foreign and Domestic Commerce, of the Department of Commerce. J. Morgan Clements, mining engineer and geologist of New York City, has been selected for the work and is preparing to leave for the Orient in a few weeks.

The object of the survey is threefold. For the benefit of American capital, a thorough study of the undeveloped mineral resources of the various countries will be made. For the benefit of American manufacturers of mining machinery and equipment, a report will be made on mines and smelters now in operation and on opportunities for the sale of American outfits. For the benefit of American users of minerals from the Far East, a study will be made of the conditions which have in the past made it necessary to buy such minerals through middlemen in Europe.

Before leaving for the Far East Mr. Clements will visit American concerns that are interested in some way with the development of the mineral resources across the Pacific and get a definite idea of specific points that ought to be cleared up.

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APRIL, 1917

## EARLY SESSION OF CONGRESS MAY SAVE EMBARRASSMENT

By calling Congress in extra session the President relieved the directors of the United States Geological Survey and the Bureau of Mines of much anxiety with regard to the conduct of their work during the next fiscal year. The sundry civil bill, which carries the appropriations for these bureaus, failed to pass in the legislative tangle which characterized the closing of the recent session. In order to arrange their work for the coming fiscal year, it is necessary for directors of bureaus to know several months in advance the amounts of money which will be appropriated.

Even if prompt attention is given the sundry civil bill on the convening of Congress, considerable loss and inconvenience will be occasioned. This is particularly true with reference to the Alaskan work of the Survey. For climatic reasons it is necessary to have the geological parties in Alaska early in June. This makes it necessary to have the complicated arrangements for the season's work ready in advance of that time. In order to get the best results, the money for the Alaskan portion of the work, at least, should be known definitely the first of March. In the same manner other work of the Survey which requires preliminary planning is likely to suffer. The same applies to many of the activities of the Bureau of Mines.

The failure of the army appropriation bill also has resulted in some uncertainty at the Survey due to the fact that it carried an appropriation of \$200,000 for topographic mapping. While the appropriation was made for the War Department, it was understood

that the work was to be done by the topographic branch of the Survey.

One of the items in the sundry civil bill which had been relied upon to relieve a very annoying condition was that allowing purchases up to \$50 to be made by members of the Survey staff without the formality of advertising for bids. This regulation has been a very expensive one in many cases. Field parties of the Survey oftentimes would be delayed so as to allow the regulation as to advertising for bids to be complied with. In some cases a party having an aggregate pay roll of hundreds of dollars a day would be kept idle while bids were being secured on a \$50 purchase, necessary to the continuance of the work. The carrying out of the regulation was particularly ludicrous in Alaska. Many times geological parties would have to post their advertisements and wait for the submission of bids in villages where no member of the community was able to read. The impracticability of this arrangement applying to small purchases was recognized long ago in the War Department and army supplies up to \$500 may be purchased in the open market when it is impracticable to advertise for bids.

## Du Ponts Buy New Factory.

The Du Pont Fabrikoid Company, with main offices at Wilmington, Del., has purchased the Marokene Company, of Elizabeth, N. J. The Marokene Company manufactures a material, similar to fabrikoid, which is used extensively by the automobile, carriage, and upholstery industries.

R. B. Heyward, who has been assistant superintendent of the Fabrikoid Company's Newburgh plant, will become superintendent of the Marokene plant at Elizabeth, N. J. No changes will be made to the present staff of employees.

The purchaser will make thorough investigations in order to learn if any improvements can be made to the product and, if possible, will better same, thus upholding the Du Pont standard.

All the sales transactions of the Marokene Company will be under the direction of the Wilmington office, and the attention of J. K. Rodgers, sales manager of the Du Pont Fabrikoid Company.

## Intercollegiate Bureau Meets

George S. Rice, chief mining engineer of the Bureau of Mines, represented Columbia University at a preliminary meeting of the Intercollegiate Intelligence Bureau. The object of this organization is to prepare for the Government of the United States the names of American college students and alumni who would be willing to enter the service of the Government in time of expected or actual war.





INTERIOR BUILDING WHICH WILL BE THE NEW HOME OF THE GEOLOGICAL SURVEY  
AND THE BUREAU OF MINES

### NEW INTERIOR BUILDING TO BE OCCUPIED MAY 1

On May 1, the 5,000 government clerks and officials under the direction of the Department of the Interior will move from the many scattered buildings throughout Washington, to the department's new home—the largest government building, with the possible exception of the Capitol.

This structure, which occupies two entire city squares and which costs Uncle Sam \$2,000,000 without mechanical or office equipment, is surpassed in floor space by only one other building in the United States—the Woolworth Building in New York City. But in contrast to the towering Woolworth Building, the new department building is only seven stories high.

The practical completion of the building means several things. It marks another step in the Government policy of assembling all branches of individual departments under one great roof. It shifts the center of governmental activities in Washington. It is so large that the Geological Survey has been called upon to take its measurements in the same way that it would take the measurements of a mountain in the Rockies. The survey will weigh the building to a pound. The number of tons of terra cotta in it will be determined, as will be number of miles of water pipes and electric wires, the size of the panes of glass

which all of its windows would make, and the length of time it would take a charwoman to wash all of the windows.

#### FOUR MILES OF MAIN CORRIDORS

This is the first time that any such computations of any large building have been made. It is estimated that if a newsboy should attempt to start at the top of the building and leave a newspaper at each of the one thousand rooms the news would be stale by the time he reached the main floor. If he were a fast walker he might complete the stunt in three and one-half hours. There are nearly four miles of main corridors alone.

Although the structure is only seven stories in height, its floor space approximates 785,000 square feet, an area larger than most truck farms near Boston. The terrazzo used in the entrances and corridors would have a four-acre plot of land. If placed end on end the slate slabs used to trim the bases of the interior walls would extend twenty-seven miles. Nine million bricks are concealed behind the exterior walls of limestone. Incidentally, there are 220,000 cubic feet of limestone.

#### OUTLINE SQUARE

The building is nearly square, each side being approximately four hundred feet long. Supporting the building are 7,500 tons of structural steel, a small amount considering the size of the building, but small because the



building is low and does not require the heavy steel girders which are absolutely necessary in towering skyscrapers.

The huge structure will be delivered to the United States on or ahead of the time specified in the contract. Although it has been the traditional procedure for the government contractor to secure an extension enabling him to complete a building a year or so after the time of delivery first indicated, and although the contractor in this case has been hampered by changes in the plans and other difficulties, he believes now that the building will be ready for occupancy by the middle of April. Be it important or otherwise, this is the first experience that the government has had with Washington's negro labor. In all probability it will not be the last.

#### HAMPERED IN MANY WAYS

This pile of limestone, brick, steel, slate, marble, and glass has been erected on time in the face of difficulties other than those referred to previously. For instance, there has been the unprecedented freight congestion, resulting in actual embargoes for weeks, if not months, at a time. For two years there has been such a shortage of materials that many have been unable to fulfill their contracts. Some of the steel for the building was more than nine months behind time in reaching Washington. Added to this Washington has shared in the labor shortage general throughout the East. Twice the Government has held up the work while it contemplated or ordered changes in construction. But for all of this the building is 2.7 per cent in advance of the expected state of completion.

#### LINES ARE HARMONIOUS

Huge as the structure is, its architecture is in harmony with the general plan of the Mall, one of the beauty zones of the Nation's Capital. It forms with the Washington Monument and the new Lincoln Memorial a great triangle that dominates the western end of the park. It is believed that one effect of the structure upon the civic life of Washington will be the shifting of much of the retail business section of the city. The new building is a mile northwest of the departmental center of the city as it was a year or so ago. The Department of Commerce was the first\* to move west of the White House. It was followed by the Department of Labor, within a block of the new Interior building. Another great structure is being erected to house the Interstate Commerce Commission. The State, War and Navy Departments are near by. The new executive center of Washington will contain all the governmental departments except Justice, Treasury, and Agriculture.

#### Resources of Canada

Arthur D. Little, Ltd., of Boston, has published a bulletin on the organization, plan and scope of the natural resources of Canada.

#### COAL SHIPMENTS DECREASE NINE PER CENT IN FEBRUARY

The following statement of carloads of bituminous coal that originated on fifty-eight railroads and of beehive coke on fourteen roads in February, 1917, was compiled by C. E. Leshner from reports received by the Geological Survey, Department of the Interior, by noon, March 15, 1917. Comparative figures based on reports for February, 1917.

|                                                                          | February,<br>1917 | January,<br>1917 | February,<br>1916 |
|--------------------------------------------------------------------------|-------------------|------------------|-------------------|
| Number of working days.....                                              | 23                | 26               | 24                |
| Carloads of bituminous coal, Pennsylvania (13 roads).....                | 148,290           | 179,974          | 183,695           |
| West Virginia, Virginia, Maryland and Ohio (10 roads).....               | 164,062           | 199,610          | 185,501           |
| Illinois and Indiana (16 roads).....                                     | 144,522           | 164,179          | 148,771           |
| Kentucky and Alabama (6 roads).....                                      | 38,785            | 42,698           | 33,387            |
| Iowa, Texas, Colorado, and Utah, and Southwestern States (13 roads)..... | 45,557            | 53,655           | 46,080            |
| 58 roads...                                                              | 541,216           | 640,116          | 597,434           |
| Carloads of beehive coke (14 roads).....                                 | 58,450            | 72,110           | 73,124            |

The decrease in shipments of bituminous coal in February, 1917, compared with January, 1917, was 15.5 per cent, and compared with February, 1916, was 9.4 per cent. The average number of cars of coal per working day was 23,531 in February, 1917, against 24,620 in January, 1917, and 24,893 in February, 1916. The shipments in February were less than in January, which was to be expected because of the fewer working days. These statistics indicate that, except in Kentucky and Alabama, the daily rate of production was lower in February than in January, 1917, and considerably less than in February, 1916. The average daily loading on twenty-three roads in Pennsylvania, West Virginia, Virginia, Maryland, and Ohio was 7 per cent less in February than in January, 1917, and on thirteen roads west of the Mississippi was 19 per cent less.

The shipments of beehive coke in February, 1917, showed a decrease of 18.9 per cent compared with January, 1917, and a decrease of 20.1 per cent compared with February, 1916.



# LOW ACCIDENT RECORD DURING 1916 CALLS FORTH MUCH FAVORABLE COMMENT

Striking Evidence of Value of Work of Bureau of Mines, Says St. Louis Globe-Democrat—Lives of Toilers Worth Hundred Times Cost of Safety, Declares Boston Post—Other Comment

The year 1916 was marked by the largest production in the history of coal mining in the United States, with 597,000,000 tons taken from the earth, by an army of three-quarters of a million toilers. The number of men killed was 2,225, which is forty-four less than in 1915, 229 less than in 1914, and 560 less than in 1913.

The death rate for each 1,000 men employed, 3.03, is the lowest in the last eighteen years, at which time about half as many men were employed. There were 269,000 tons of coal mined for each life lost, which is the greatest tonnage per fatality in the history of the United States. The increase in tonnage for each life lost is nearly 35,000 tons over the year 1915. A. H. Fay, statistician of the Bureau of Mines, has collected some newspaper comment on this subject of which some is reproduced herewith.

In commenting on the lowering of the fatality rate at coal mines and the establishment of the Bureau of Mines, the St. Louis, (Mo.) Globe Democrat, February 20, says that:

It was during the latter part of President Roosevelt's administration that an earnest Government inquiry into the alarming frequency and abnormal fatalities of American coal mine explosions was undertaken. Experts from Europe accompanied the late Dr. Joseph A. Holmes in a tour of American coal mining fields, where conditions were studied. As a result of their observations and subsequent scientific inquiry, the Bureau of Mines, established during the Taft administration, has waged a campaign of education in practically every mining district. Mine rescue stations have been established and mine rescue cars maintained. Miners have been trained in rescue work. By the most cordial cooperation of State and national authorities, the mining laws of many States have been improved, looking to the avoidance of accidents. These have fallen short of perfection, for the problem is intricate differing in various mines and in various seasons in the same mines. The movement suffered an ironical blow early in its history when a "model mine" was wrecked by a disastrous explosion.

But the improvement in conditions has been steady, even though the statistics did not always reveal it. One large explosion, involving hundreds of men, would conceal the improvement in a multitude of smaller mines. The 1916 record, consequently, has an element of luck in it, but it is gratifying that the public has such striking evidence of the value of the bureau's work. There is nothing the Government cannot afford to do to make it safer for the men who go down into the bowels of the earth to mine our fuel.

MINERS' LIVES PRESERVED BY SAFETY-FIRST RULE

The conservation of life and limb in a great industry so that the individual may be spared for future service in contributing his share towards the nation's progress is of vital importance. In this connection the Grass Valley and Nevada City (Cal.) Union, remarks that:

Coal mining throughout the United States has been made much safer by the life-conserving cautional measures instituted by the National Government's Bureau of Mines. To the late Dr. Holmes, belongs most of the credit for instituting this era of greater safety in mining operations. This is a humane work that should be expanded until it provides the utmost possible safety for all men who work in mines. By scientific devices and by rigid care, this naturally hazardous occupation may be made less dangerous to life and limb. Those who toil beneath the earth should have thrown around them every possible safe-guard. It is gratifying that so much progress has been made, in the coal-producing regions, in conserving miners' lives.

In commenting on the changed conditions in the coal mines, and the introduction of modern appliances, the Philadelphia (Pa.) Bulletin, February 20, 1917, makes the following remarks:

The introduction of electric and compressed air machinery in the coal mines, with the consequent elimination of many of the more common causes of explosions, has cut down the casualty list. The safety propaganda instituted by the Federal Bureau of Mines, and the cooperation of many of the most progressive mine owners and operators have also had excellent results. Moreover, the difference in classes of labor employed—in recent years—in the anthracite and bituminous fields has also served to reduce the number of fatal accidents. Fewer ignorant men are now permitted to go underground to endanger their own lives and the lives of others.

Mining is destined to be made safer still, but it will always rank as the most perilous of callings and one whose nature is such as invariably to enlist sympathy for those who are engaged in it.

The above statement may be supplemented, as regards the miner's responsibility, by the following statement from the Philadelphia (Pa.) Record, February 24, 1917:

So far as this State (Pennsylvania) is concerned, it must be evident to all whose memories carry them back some years that serious disasters in the coal regions, both anthracite and bituminous, are much less numerous than they formerly were. Fatal accidents to individuals, too often due to the miners' own carelessness, are unfortunately still common, and will probably continue so for many years. Only a steady uplift in intelligence and prudence can save the men from taking needless risks.

## INFLUENCE OF BUREAU'S WORK EXTENDS BEYOND MINING CENTERS

That the results of the work of the Bureau of Mines is being felt in manufacturing centers, far removed from the coal fields, is evidenced by the Boston (Mass.) Post, February 27, 1917, in which it says:

The recent report for 1916 of the director of the Federal Bureau of Mines gives satisfaction to all who have a feeling of sympathy for the man who toils underground. His work is arduous enough without having attached to it the ever present danger of disaster. That mines are steadily improving is now apparent.

We are gradually coming to see that anything that conserves the lives of our toilers of any kind is worth a hundred times what it can possibly cost. The work of the Bureau of Mines is a standing case in point. Yet there are occasionally found people who would like to abolish it.



The work of the Bureau is recognized by the Fall River (Mass.) Globe, of March 1, 1917, in the following language:

That gratifying progress is being made in lowering the number of fatalities among miners in the United States is indicated by the recent report of the director of the Federal Bureau of Mines.

#### SAFETY FIRST PAYS

The Crafton (W. Va.) Sentinel, March 1, 1917, from the Pittsburgh, (Pa.) Gazette-Times, February 20, 1917, in commenting on the reduction of fatal accidents at coal mines says:

Any way you look at it, "safety first" pays. It may be sordid and brutal to value human life by the dollar standard but since it is the language of our currency that the people understand best, we are compelled to resort to it considering the fruits of the safety movement as disclosed by a statement of the United States Bureau of Mines covering operations in 1916. Last year was the most prosperous in the history of coal mining in this country. More men were employed and the output of coal was greater than ever before, yet the loss of lives in the mines was less than for any other year in a decade.

It is evident that the "safety first" movement is one of the greatest of the national assets. It must be not only fostered but extended. It means not only money to millions, which is perhaps the least valuable of its fruits; it means health and happiness for countless persons to whom they have been denied, the integrity of families and the reduction of poverty and dependence. It can be introduced in every industry with results equally as great as have attended its intelligent application to coal mining.

Thus it is seen that the public is beginning to realize that it pays to be careful, for it is the public that must eventually bear the burden in the loss of useful citizens and increased expense in caring for the injured and their families. The Scranton (Pa.) Times, February 24, 1917, comments on this phase of mine accidents as follows:

The country will be happy to know of the advance of life-saving in our mines. This effort is going to be stimulated, too, by compensation acts for one thing. Under such legislation an injury that in the old days was neglected is treated, reducing the hazard of fatal issues. Greater safeguards are established to prevent fatalities. Why? For two reasons. One is that the idea of social justice, which is plain humanity, is gripping the mine owners more intensively. The other reason is, because it pays. It costs compensation if a man is injured. The industry is made to bear it if a man is hurt or killed. His family must be taken care of at the expense of the industry. So, there is hope that between an expanding humanity and humane legislation the frightful toll of the mines in human life will with every year show fewer deaths, fewer injured and fewer wives widowed and children orphaned.

#### SAFETY FIRST SUCCEEDS

The Salt Lake City Herald, February 26, 1917, recognizes that the efforts to safeguard the miners are not futile for it states:

While the safety-first propaganda is of comparative recent origin, it has progressed sufficiently to rebuke the criticisms of the cynical who questioned the possibility of the application of mere psychology to a material condition. The great industrial armies of America have adopted the slogan and proved its worth to their entire satisfaction. A recent government report with reference to coal mining clearly demonstrates what safety-first means to many thousands of workmen.

Promoters of the safety-first movement may properly regard this report as evidencing the success of their efforts and justifying their enthusiasm. In the public generally this showing should create a powerful demand that the movement be extended to those industries which have hitherto held aloof. The striking improvement in conditions renders it manifest that even better results can be obtained, and that the development of the maximum of benefit from safety-first rules must be vigorously sought.

This trend of thought is also shown in a statement from the Mahoney City (Pa.) American,

under date of February 27, 1917, which is as follows:

There has never been any reason to doubt that safety-first as a slogan for the great industrial armies of America, would quickly prove its great worth in protecting the lives of employees. These figures are not only convincing as to the effectiveness of safety-first regulations in coal mining, but must be regarded as a powerful demand for further development.

The Dubois (Pa.) Express, February 23, 1917, in speaking of the reduction of coal mines fatalities in 1916, says:

The "Safety first" movement in its application to the industry of mining produced encouraging results during the past year. This showing of the conservation of the life and limb of employees is accentuated by the increase in the number of men engaged in that hazardous work, as well as in the appreciable increase in the tonnage of coal mined over the previous year. The safety methods insisted upon by the Bureau of Mines will lead to a still greater reduction in the percentage of accidents.

From the coal fields of Alabama comes a statement through the Birmingham Age-Herald, February 20, 1917, as follows:

Of all the statistical data compiled for the year 1916, the record issuing from the Bureau of Mines of the United States Interior Department is especially notable in view of the fact that the figures show a large decrease in fatal accidents. Fewer men lost their lives in the coal mines of this country last year than in any year, in the past ten notwithstanding the fact that the output was greater than ever before.

The late J. A. Holmes, who, as director of the Bureau of Mines, had worked with scientific knowledge and characteristic earnestness to minimize disasters from gas explosions, would have been exultant over the government report, because it is the best, relatively speaking, ever presented. Dr. Holmes was hopeful that the day would come when casualties would be greatly reduced, but he probably never dreamed that the number would be so few as last year.

What has been accomplished so far is due to the friendly cooperative spirit that exists between the State mine inspectors, the mine operators, the miners and the Bureau of Mines. The results attained give the Bureau much encouragement to renewed and more vigorous effort in the conservation of the human resources of the country.

#### ALUMINUM BEING USED

##### WIDELY IN GERMANY

Interesting facts with regard to the development of the mineral resources of Germany since the war were presented to the members of the staff of the Bureau of Mines in an informal address last month by Prof. A. E. Taylor, of the University of Pennsylvania. Professor Taylor discussed in detail the substitutes which had been found for copper. He declared that aluminum has come into very wide use in Germany, and it is Professor Taylor's belief that important discoveries of means for the recovery of this metal have been made by Germany since the outbreak of the war. Another matter which impressed Professor Taylor while in Germany was the fact that great quantities of iron railroad ties were in evidence everywhere. That production is far in excess of actual needs was very clear. This heavy production of iron, Professor Taylor believes, was due to the necessity of reducing it in order to get the phosphorus content of the ore.



# PROSPECTOR STILL ESSENTIAL TO PROSPERITY OF INDUSTRY, NORTHWEST OPERATORS HOLD

He Should Be Supported Financially, It is Agreed, and Should be Considered in Enactment of all Legislation—Northwest Mining Association has Highly Successful Meeting

The annual session of the Northwest Mining Association held at Spokane, February 19-25, was a pronounced success. The membership includes the States of Washington, Oregon, Idaho and Montana, and British Columbia.

Registration showed over 600 present, and on the afternoons of February 21, 22 and 23 sectional meetings of the A. I. E. E., A. I. C. E. and A. I. M. E. were held in conjunction with the association session.

The earlier part of the week was given over to receptions by the various organizations, examination of the exhibits, an informal dance and the work of the committee on resolutions.

On Wednesday afternoon the Pacific Telephone and Telegraph Company gave a fascinating moving-picture exhibit on the building of the Trans-Continental Telephone Line, and in the evening, Mr. F. W. Isham showed some very interesting slides of Alaskan mining, followed by a paper on the "Manufacture and Uses of Pure Iron."

Thursday was "Prospectors' Day," and the principal feature was an address by Prof. Arthur Lakes, formerly of the University of Colorado, now consulting geologist at Nelson, B. C., on "Fissure Veins."

In the general discussion which followed, the rôle of the prospector was clearly indicated and great emphasis was placed on the necessity for supporting the prospector not only financially but by the avoidance of adverse legislation, which can only hamper the mining industry and seriously handicap the hardy pioneers to whom, however, all mining interest is indebted most deeply.

It was at this meeting that prospectors' heaven was defined as "Lake Superior for a reservoir, the Mississippi River for a sluice box, Pike's Peak for a dump, and railroad scales for clean-up."

Closely affiliated with the development of new districts is the construction of proper roads, which was discussed in the papers on "Cement and Concrete" in the afternoon.

Thursday evening was the annual banquet, at which Dr. Henry Mace Payne, of New York, was asked to preside as toastmaster in recognition of the American Mining Congress, of which he was special representative. Among the prominent speakers at the banquet were Dr. Dorsey A. Lyon, of the Bureau of Mines; Prof. Francis A. Thomson, of Pullman, Wash., and Mr. E. Jacobs, of Victoria, B. C., secretary of the western branch of the Canadian Mining Institute.

Friday morning was devoted to a visit at

the Spokane Stock Exchange, and the afternoon to a discussion of "Ore Treatment" and a "Progress Report on the Construction of the Bunker Hill Smelter." This plant is of special interest to the Northwest because it is an independent smelter prepared to do commercial work for individual operators in any quantity, large or small.

Friday evening Dr. Payne gave a stereopticon lecture on "Mining in the Arctic," which was followed by a smoker and cabaret tendered the visitors by the Chamber of Commerce of Spokane.

The Friday noon luncheon at "Ye Silver Grille" was the courtesy of the Business Men's Club.

The following resolutions were adopted during the session:

1. Commending the work of the Washington State Geological Survey and urging a complete topographical survey of the State in county units.

2. Recommending a reduction in the royalty charged by the State on mineral leases of State land and a change from 5 per cent on gross to 4 per cent on net smelter returns.

3. Recommending the appointment of a committee of three by the president of the association to investigate the possibility of an independent smelter and refinery near Spokane.

4. Appointing a committee of three to secure an ore-testing plant in or near Spokane.

5. Urging the Bureau of Mines to make Moscow, Idaho, a full station.

The exhibits of mining machinery, safety appliances, rescue equipment and technical literature were worthy of a national convention. Nearly every prospector and operator present sent samples of his ore, all of which were carefully labeled and advantageously exhibited by the committee in charge. Probably a more comprehensive display of the developed mineral resources of the Northwest has never been made.

The credit for this is due to the Hon. Graham B. Dennis, president of the association, who is also well known to many members of the American Mining Congress.

The arrangements for the convention were under the direction of Mr. F. C. Bailey, the secretary, and his able assistant, Mr. L. K. Armstrong. These gentlemen are indefatigable workers and it has been through their efforts and those of President Dennis that the association now has permanent headquarters at the Spokane Hotel.

The weekly luncheon and social half hour are regular features throughout the year, and at these times Mr. F. A. Ross and Judge Charles A. Gram are potent factors.

Every year a summer excursion is made to the nearer mining camps under the leadership of Secretary Bailey, who is a living exponent of the "get-together" idea.

Among the prominent members is Mr. Sidney Norman, editor of the Northwest Mining Truth. It is safe to say that no mining man ever visited Spokane and met Mr. Norman and went away without a warm feeling for the hospitality of the State, a clearer idea of the immeasurable resources of the great Northwest and an increased sense of personal responsibility to maintain the welfare of the mining industry. As a champion of the prospector and miner, and an aggressive, forceful editorial writer, Mr. Norman has few peers.

An unfortunate event was the fact that the State Legislature is now in session and no prominent State officials could be present. An attempt was made to change the date of the session of the Mining Association, but this met with disfavor on the part of the many prospectors who desired to finish their annual assessment work.

Under a discussion as to what will be the condition of the mining industry after the war, it was generally conceded that the operators of low-grade properties should "make hay while the sun shines," for after the war is over iron, steel, copper and gold will remain relatively stationary during the reconstruction period; lead will do fairly well, but zinc and other metals will go down, so that now is the time for the operator to reduce his operating cost and to develop the most economical method of handling his ores.

### **MINE SAFETY REGULATIONS ARE PRAISED BY R. J. IRELAND**

That the rules and regulations of the Bureau of Mines, looking to preparedness for emergency in case of accidents, are of great practical value is indicated in the following letter from R. J. Ireland, the president of the Owl Creek Coal Company. The letter is addressed to the Director of the Bureau of Mines, and reads:

"I am just in receipt of a complete report from Mr. Barnard, relative to the condition of the mine after our recent fire, and am glad to note thereby that the amount of damage, outside of our loss in tonnage, is not great.

"Mr. Barnard is very profuse in his description of our preparedness for such an emergency, as prescribed by the rules and regulations of your department. In fact, to use his words, 'They are chiefly responsible for saving the property, or at least saving thousands of dollars, and, no doubt, several lives.' His report shows not a single person was even scratched, for which I am personally more than thankful, and feel that the Bureau of Mines should take full credit

for its foresight in prescribing such safety regulations."

### **B. F. MILLARD EXPRESSES VIEWS AS TO ARBITRATION**

B. F. Millard, the well-known Alaskan mine operator, in a recent letter to the Mining Congress, says:

"I most heartily agree with your taking up the matter in Congress and in every State in the Union of the matter covering strikes and lockouts. I have always contended that if all parties interested in the labor question exhibited a desire to be fair that all difficulties could be adjusted and settled by arbitration.

"I have employed labor for thirty years, sometimes having as high as 500 men under my charge. I never have had a strike or a lockout—not only that, I have been on both sides of the question—for many years I labored for others; in those days, however, a strike was never thought of, the employer hired and discharged men to suit his own convenience and always paid just as little wages as possible. After becoming foreman for a large lumber company I have hired for them hundreds of men at from \$14 to \$20 per month and board and worked them from twelve to thirteen hours a day.

"Those days have passed, and labor and capital are getting closer together. Brute force is no longer the slogan. Foremen are not hired because they are pugilists. Labor is coming into its own. Capitalists have received a great jolt, and have come to the conclusion that it is better to feed and house men well and comfortably, and treat them as human beings. The only question is the wage. Capital and labor differ upon this question, and always will. We will always have great corporations and poverty, and right at this point is where arbitration will come in. All fair-minded men should be willing to leave their affairs, or rather disputes, to a competent body of disinterested men, and should be willing to abide by their decision.

"The disputants are not the only ones interested or injured by strikes and lockouts, but it carries to the great body of American citizens not directly interested in the disputes, and some means ought to be provided whereby both parties to a dispute should be held up until their grievances could be passed upon by an intelligent body of disinterested citizens, and sooner or later it must come to that. Do all you can to assist in passing an arbitration law that would have a tendency to give full justice to both capital and labor and the great body of onlookers. You can draw on me for any assistance that it is in my power to give."

### **Idaho Report Published**

The eighteenth annual report on the mining industry of Idaho, which covers 1916, has been printed. It is from the pen of Robert M. Bell, the State Inspector of Mines.



# DEDICATION OF BUREAU OF MINES PITTSBURGH BUILDING TO BE MADE NOTABLE OCCASION

**Greatest Research Laboratory Under Control of Any Government Being Completed  
at a Cost of \$1,000,000—Five Engineering Societies to Hold  
Annual Meeting during Dedication**

Largely through the efforts of the late lamented Dr. Joseph A. Holmes, the first director of the bureau, the Bureau of Mines has nearing completion in Pittsburgh a modern research laboratory involving a cost of about \$1,000,000. The buildings which constitute this complete plant will prove a graceful addition to the already notable group of buildings in that district. This plant will be, in its way, one of the greatest laboratories under Government control in any country in the world.

The name which the Bureau of Mines bears does not adequately express the far-reaching duties called for by the organic act creating it or the many ramifications of the mining and allied industries. Some people believe that the bureau deals only with the safety side of mining. It is perhaps true that the larger part of the work is devoted to mining and that our efforts toward saving human life in the mines of the country constitute its most spectacular work. This part of the work alone, Director Manning feels, justified the creation of the bureau, as each year sees a decrease in the number of miners killed and injured. The bureau is partly responsible for those conditions, and freely gives credit to the many cooperating agencies, such as the operators themselves, the State mine inspectors and the miners.

Entirely outside of the work in mining, the bureau is doing an important work, in which mechanical engineers are interested, in its study of fuels and the means whereby they can be more efficiently used. As long as fuels were very cheap and it was not necessary to seriously consider efficient practices, no very deep study of the subject of either fuels or combustion was needed, and cut-and-try methods were sufficient for commercial results; but with the need for increased economy and the conservation of rapidly disappearing types of fuel, together with the rapid introduction of special methods of utilizing fuels, such as by means of gas producers, surface combustion, powdered fuel, and liquid fuels in internal-combustion engines, the engineer requires a more careful explanation of the phenomena of combustion and a more intimate knowledge of the characteristics of available fuels. This work is being carried on in a systematic manner by the bureau, and the results already obtained show that it promises to be a study of important interest to all mechanical engineers and all users of fuel.

These investigations into this science of combustion are of value not only to mechanical engineers but to every user of fuel in the country, and especially to manufacturers who have large power plants and burn great amounts of coal in a year's time.

There is at present a renewed interest in the subject of heat transmission from the high temperature gases produced by combustion through metallic plates into fluids. Here again the art has needed a clearer conception of the mechanism of heat transfer and the constants and formulæ that are necessary to put the design of heat transmitting devices on a rational basis. In this work the mechanical engineers of the country are greatly interested.

The work of the bureau is also of much interest to electrical engineers because the bureau is engaged in certain unusual electrical engineering researches in a field in which many electrical engineers are working, for which many more are making apparatus, and to which all electrical engineers could be helpful if they would study its needs. The last reason is, after all, the most forceful, for this is a day in which "service" is a word to conjure with. Electrical engineers should be interested in the bureau's work because the mining industry needs their ideas and their consideration of its electrical problems.

The bureau's researches are of a kind that a large proportion of electrical engineers have no time to undertake or equipment to carry on. The purpose of the researches is to aid and foster the development of better and safer electrical mine equipment, and this often leads to profitable activities on the part of the electrical engineer.

The manufacturers of electrical equipment are also interested in the electrical work of the bureau because the bureau can assist them in developing their apparatus along safe lines and because the bureau offers to issue formal approval with the bureau's specifications. Numerous manufacturers have materially improved the character of their apparatus by working in cooperation with the bureau, and at the present time the bureau has the co-operation of manufacturers of electric lamp bulbs, portable electric mine lamps, dry battery flash lamps, electric motors, storage batteries, electric wires and cables, electric switches, motors, headlights, storage battery locomotives and mining machines.

Electrical engineers of public service companies should be interested in the work of the

bureau because they are seeking to supply power for the operation of electrical mining machinery, and the bureau, in cooperation with the electrical engineers of coal companies, has prepared a set of rules that bear upon the installation and use of electrical equipment to which and through which the public service companies are seeking to supply power.

The petroleum investigations are large and important and of interest to all oil and gas men, pointing out, as they do, better methods for drilling oil wells, the stoppage of the waste of natural gas and oil, and even new processes for obtaining larger quantities of gasoline from the crude oil.

Every manufacturer of iron and steel in the country is interested in the work of the Bureau of Mines, also every metallurgist and every owner of a metal mine. The bureau has already made a careful investigation of the titaniferous iron ores of the United States, their composition and economic value. It has also issued a report on the manufacture and uses of alloy steels, a general statement on the composition and heat treatment of various steels, and their use for special purposes.

It has but recently completed an investigation of molybdenum, used as an alloy in hardening steel, and has shown how a profitable industry may be created in the United States through the development of American ores.

The bureau is also interested in the safety of the workmen in the iron and steel mills and

has issued reports on health conservation at steel mills, discussing the need of medical supervision of employees, the construction of buildings, and standards of sanitation, and on safe practice at blast furnaces, being a study of the causes of accidents and methods for their prevention. In this way the iron and steel interests have considerable to do with the Bureau of Mines.

The bureau's work aims to be of assistance to every municipality interested in the abatement of the smoke nuisance and the bureau has issued reports showing the proper manner in which to burn coal in order to avoid smoke and also the necessary legislative way in which to control this evil. It is needless to say that there is a large public interest in this work.

The bureau's activities also extend to the quarry interests of the country, the bureau having recently completed an investigation on the technology of marble quarrying which summarizes efficient and economical methods of quarrying and preparing marble and describes special and improved machinery and equipment. This is but one of a number of reports to be issued in behalf of the quarry industry.

The bureau's work also extends to the manufacturers of chinaware and ceramic engineers. In a report soon to be published by the bureau it will be shown that the practically unused china clays of Georgia can be blended in such a manner as to make this chinaware equal to

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that which comes from European countries. This may mean the independence of the United States of a foreign source of supply of china clay and the development of a considerable industry in this country.

Metallurgists and others interested in the development of the electric furnace are in close touch with the work of the bureau. A number of investigations along this line have already been completed and reports issued on electric furnaces for making iron and steel, the electrical furnace in metallurgical work, and the smelting of copper ores in the electric furnace.

These are but a few of the main activities of the Bureau of Mines, and show conclusively the large clientele of technical and engineering men and manufacturers who are directly interested in its work. Some part of the work of this bureau touches every technical and scientific man and every engineer in the country. Mr. Manning thus sketches this work briefly to show that upon the dedication of the new plant of the bureau at Pittsburgh there is occasion for a great gathering of manufacturers and technical and scientific men of the country. He points out that there are 25,000 men who are members of the five great engineering and chemical societies, such as the American Institute of Mining Engineers, the Mechanical Engineers, the Civil Engineers,

the Electrical Engineers and the American Chemical Society, and there are fully as many men connected with subsidiary societies, all representing the professional end of the industries, and holds therefore that there is a widespread interest in the work that the bureau intends to do in its new laboratories in Pittsburgh.

Since the beginning of the great European war there has been considerable amazement expressed at the technical and engineering efficiency of some of the nations and the lack of this in other nations. It has resulted in a great awakening in those countries that were behind in engineering; and the indications now are that each of these countries, at the close of the war, will begin a new era of scientific and engineering development, especially in its relation to the industries. This will mean a closer and a stronger competition with all of the European countries than ever known before. Mr. Manning says he is happy to state that the United States is not to be behind in this movement, as evidenced by the National Research Council recently formed in New York, which is to cooperate with the Federal Government in any endeavor in which industry can be benefited. This is also the purpose of the Bureau of Mines in its own sphere.

It has been Mr. Manning's thought that, at

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the dedication of the new buildings, October 5, 6 and 7, it will be opportune for a great national rally of the scientific and technical men of the country, emphasizing in every way the important place science has now attained in aiding the industries of the country. "It is a movement," he says, "which should be fostered very carefully, for some of the industries cling to the thumb-rule methods, which are wasteful and make competition difficult. We have already awakened to the fact that the cream of the natural resources of the country has been skimmed, and that we are now face to face with problems in which science will figure more and more if we are to be a prosperous and successful country in the future.

"The business men of Pittsburgh have a great opportunity before them to show the entire country, if not the entire world, that we are abreast of the movement to link science with the industries. My idea would be to have every society in any way in touch with the Bureau of Mines either hold its annual convention in Pittsburgh or be otherwise officially represented at the dedication of the new buildings, allowing the delegates to visit the various laboratories, the bureau keeping open house during the entire week. It is further planned that there shall be a national mine rescue and first-aid contest in which teams from mining companies throughout the country will participate."

In 1911, when the bureau was just finding itself, there was a similar demonstration in Pittsburgh, at which 20,000 miners were present. The bureau will take charge of this part of the dedication, and will see that the teams from the mining companies are here and will ask aid of the operators in excusing as many men as possible. There also will be demonstrations at the experimental mine of the bureau at Bruceton, Pa., in which miners would be shown the explosibility of coal dust without the presence of gas. This feature is generally accepted by the mining men of the country, but would prove a spectacular addition to the program, as there would be actual dust explosions at the mine.

Mr. Manning has no doubt that, altogether, this will be one of the greatest gatherings of men influential in the work of the country that Pittsburgh has ever entertained, and that the lessons will go out to the entire world as to what the United States is doing in mobilizing science in behalf of industry.

## SENATOR JONES HONOR

### GUEST AT LUNCHEON

A luncheon was given by the Department of the Interior Lunch Club, March 7, to Senator A. A. Jones, of New Mexico, who resigned the office of First Assistant Secretary of the Interior last spring to accept a senatorial nomination from his State. The department mess room in the Bureau of

Mines Building was decorated with flags and flowers.

Secretary Lane paid an eloquent tribute to the breadth, power, sincerity and stalwart manhood of his former chief assistant, and sketched the great opportunity before him in the Senate during the next six years. No period of American history, he said, was so charged with virility, solemn duty and great opportunity as that which we are now entering. Even the period of nation-forming, following the Revolution, was not so pregnant with possibility as this era, in which, following upon fifty years of immense commercial activity, of strength-gathering, we are now emerging in full power into the world council of the nations. It is the time for men of courage and power and influence to step to the front.

Senator Jones, in a forceful speech, said that he regarded the Democratic victory in the State of New Mexico as a ratification by the people on the border of the President's Mexican policy. He stated that his connection with the Department of the Interior had given him strength everywhere during his campaign, and this he attributed to the sound accomplishments of the department during the present administration and their recognition by the people. He closed with an earnest plea to all Americans, in this juncture, to stand by the President.

Other speeches were made by George Otis Smith, director of the United States Geological Survey; Assistant Secretary of the Interior Bo Sweeney; Commissioner Cato Sells, of the Indian Office; Van H. Manning, director of the Bureau of Mines; Commissioner G. M. Saltzgaber, of the Bureau of Pensions, and First Assistant Secretary of the Interior Alexander T. Vogelsang.

Others present at the luncheon were: Charles D. Mahaffie, solicitor of the Interior Department; R. F. Whitehead, First Assistant Commissioner of Patents; E. B. Merritt, Assistant Commissioner of Indian Affairs; F. J. Bailey, chief clerk, Bureau of Mines; C. B. Gardner, solicitor's office, Interior Department; E. J. Ayers, chief clerk, Interior Department; F. W. H. Clay, Assistant Commissioner of Patents; J. K. Clement, physicist, Bureau of Mines; C. L. Parsons, chief chemist, Bureau of Mines; Morris Bien, counsel, Reclamation Service; F. M. Johnson, supervisor of surveys, General Land Office; J. J. Cotter, National Park Service; E. C. Tieman, Deputy Commissioner of Pensions; H. A. Meyer, private secretary to Secretary of the Interior; W. C. Edes, Alaskan Engineering Commissioner; R. S. Yard, National Park Service; G. S. Pope, engineer, Bureau of Mines; G. S. Rice, chief mining engineer, Bureau of Mines; C. J. Blanchard, statistician, Reclamation Service; J. T. Newton, examiner-in-chief, Patent Office; C. Naramore, petroleum technologist, Bureau of Mines, and M. W. Ball, law examiner, Bureau of Mines.



### STUDY OF NICKEL AND COBALT TO BE BEGUN

Carl E. Julihn, of Alameda, California, has been appointed a mineral technologist in the service of the Bureau of Mines. He has been assigned to the Bureau of Mines station at Golden, Colorado. He will begin at once an extensive study of nickel and cobalt, with the idea of ascertaining the possibility of obtaining a domestic supply of these minerals. Mr. Julihn's salary will be \$3,600.

### HOLMES SAFETY ASSOCIATION HOLDS ANNUAL MEETING

Before any awards will be made by the Joseph A. Holmes Safety Association at least \$100,000 must be in the treasury of the organization, it was decided at a meeting of the directors in Washington, March 6. Some of the directors are in favor of waiting until \$150,000 has been accumulated.

A constitution and by-laws were adopted and the name of the American Ceramic Society was added to the list of component organizations. L. R. Palmer, of the National Safety Council, addressed those present, during which he told of the growth of the safety movement. Van H. Manning, the director of the Bureau of Mines, reviewed the work which had been done by the association since its organization.

### Working on Rock Dusting Device

A mechanical device for applying rock dust in mines is being developed by the Bureau of Mines. It is hoped that important improvements may be developed which can be used in connection with rock dusting machines.

### Washington Map Selling Rapidly

A new map of the District of Columbia and its vicinity, which recently was placed on sale by the Geological Survey, is selling in unusual numbers. The issuance of this map is in line with the policy of the Survey to place at the disposal of the public splendidly executed and highly accurate maps which find use in many industrial activities and in addition are very valuable to motorists.

### SUPERIOR TO LIENS

The New York statute (Laws of 1897, ch. 415, sec. 8) providing that upon the appointment of a receiver of a corporation other than moneyed corporations, the wages of the employes shall be preferred to every other debt or claim does not make the claims of laborers and employes preferred and does not require their payment out of the assets of the insolvent corporation as against a prior valid existing mortgage executed by the corporation before the claims for labor had accrued.

Schmidtman *vs.* Atlantic Phosphate & Oil Co., 230 Fed., 769, p. 770.

## Personals

Victor Brandt, who is interested in potash recovery from brines in Nebraska lakes, has returned to Nebraska after an extended stay in Washington.

C. A. Herbert, of Cameron, Missouri, has been appointed a mine engineer in the service of the Bureau of Mines. He will have charge of the mine rescue car to be stationed at Raton, New Mexico. He is to report for duty April 1. His salary will be \$3,000.

Fred Green has been made state mine inspector of Kansas to succeed John Pellegrino, resigned.

G. W. Evans, of the Seattle Station of the Bureau of Mines, is visiting the coal mines of Washington. He hopes to be able to visit all the mines in that State, so as to have first-hand knowledge of conditions in each property.

Carl Scholz and Miss Mae A. Fleming were married in Chicago on Sunday, March 4, 1917. A wedding trip had been planned for southern California, but at the last minute was abandoned because of the pressure of important business matters.

THE MINING CONGRESS JOURNAL extends its best wishes.

### ANTHRACITE SHIPMENTS SHOW DECREASE DURING FEBRUARY

The shipments of anthracite in February, as reported to the Anthracite Bureau of Information, at Wilkes-Barre, amounted to 5,178,432 tons, as compared with 5,940,725 tons in January of this year and with 5,696,306 tons in February, 1916. The decrease as compared with January was 762,291 tons, and as compared with February, 1916, the decrease was 517,874 tons, the latter being due principally to the shortage of labor this year as compared with last, though about 225,000 tons of it was due to the fact that in 1916 there were twenty-five working days and in 1917 there were only twenty-four.

### POTASH INVESTIGATION BEGUN AT SALT LAKE CITY

An investigation looking to the recovery of soluble potash salts from mineralized ores, tailings and other products of milling operations has been begun at the Salt Lake City experiment station of the Bureau of Mines.

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# THE MINING CONGRESS JOURNAL

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VOL. III

SAFETY-EFFICIENCY-CONSERVATION

No. 5



DORSEY A. LYON

Superintendent of the Seattle Mining Experiment Station

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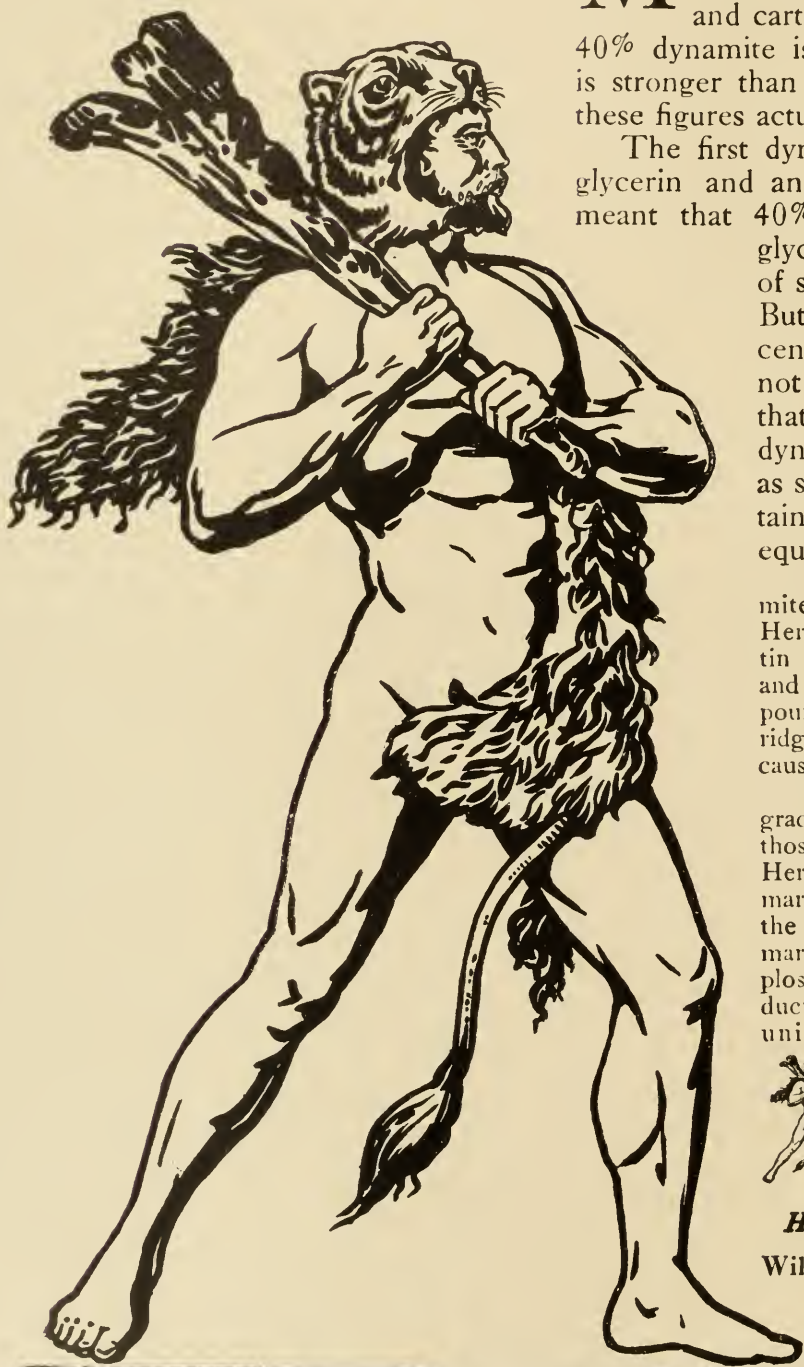
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# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## CENTRALIZATION OF GOVERNMENT

Every tendency of the time is toward increased power in the Federal Government. Whether we approve or not, increased centralization is inevitable. Even those who oppose this tendency must admit that in many lines general control is essential to the best interests of the country. In disputes between the individual states and the Federal Government over matters in which the general public is concerned, the constitutional rights of the Federal Government to control the situation has been generally upheld by the courts. The present war situation has intensified this tendency toward centralization of power. As time goes on, more and more will mining men find it important to keep in touch with the Federal activities; to know what the various Bureaus are doing with reference to their occupation; to know about the bills which are being considered by Congress, in order that they may be able to exert an influence in favor of good legislation, and in opposition to that which will hinder their industry. More and more will the mining industry need the services of the Washington office of the American Mining Congress, through which to keep posted as to the inside workings of Congress and the Federal Bureaus having to do with mining, and to mobilize the influence of the mining fraternity in proper channels. THE MINING CONGRESS JOURNAL is the only publication making a specialty of this kind of information, and it becomes increasingly important that its pages shall be available to those who are interested in the Federal activities. It is equally important

that the Mining Congress shall have within its reach those whose assistance should be given when important matters are under consideration by the governmental authorities.

## DISTRIBUTION COSTS

Approximately sixty-five per cent of the average price paid by the consumer is made up by the costs of distribution and exchange. In other words, the producer gets thirty-five cents for those articles which cost the consumer one dollar. The frequent criticisms of the producer whenever the market price of a commodity has become excessive gives rise to many efforts for relief. A recent session of the Wisconsin legislature attempted to enact a law providing for municipal coal yards through which to purchase coal not only for the public use but also for sale to private consumers. This principle followed to its logical conclusion would do away with the middle man and the small dealer and put into active service in other lines those who are thus relieved from service as distributors. Perhaps in no field is there room for greater economy than in the field of distribution. The average housewife uses a telephone call costing from three to five cents to request her grocer a half mile away to send a pound package of Dr. Blank's sanitary, brain producing, health food. The grocer sends a messenger boy with a delivery wagon to deliver to Mrs. Housewife three cents worth of grain, two cents worth of package, and a cent's worth of advertising, for which she is charged ten cents. On its face the grocer has made sixty-six and two-thirds percent profit. As a



matter of fact, his profit has scarcely covered the cost of handling, bookkeeping and delivery. Mrs. Housewife has paid thirteen cents for three cents worth of groceries and she complains loudly of the high cost of living. Upon the other hand, it is probable that the earning power of the head of this family is larger than it might be if this particular grocer was a competitor for the husband's job. It is also true that the telephone would be greatly missed by the housewife, who now accepts as a matter of course the conveniences with which she has been surrounded. Thus far the frequent efforts to reduce the cost of living have been unavailable. The retailer has been investigated, the producer has been indicted, and when all is over, it is generally found that each element in the process of production, distribution and exchange has only met those conditions which have been forced upon it by the luxurious desires of the consumer.

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#### MAKING STATISTICAL RETURNS A DUTY

The compliance with requests by the United States Geological Survey for various classes of information may now be considered as a patriotic duty. The Survey's point of view is that of anticipating the needs of those who must supply the government in its task of unifying the industrial strength of the country so as to make possible the most effective conduct of the war. This fact should remove the idea of drudgery in making these returns.

It is apparent from the large number of letters reaching the Survey that many producers of economic minerals, especially the war metals, are beginning to be aware of the part they can play now that war is an actuality. They realize that they can be of material assistance in supplying some part of the countless urgent needs for such materials as are known not to be plentiful as domestic supplies. The Geological Survey is acting as a bureau of information in matters of this kind and is giving very valuable assistance to the War Department. All mine operators are urged to cooperate

in making this service a success. In collecting statistics the majority to whom the request is sent answer promptly. In most cases, however, there is a minority which fails to make the return. The most serious feature of this is that it causes delay while follow-up requests are being sent out. In some cases it is necessary to go to the expense of sending a personal emissary to get the information. It is believed that there will be less delay than ever in such matters at this time as it is realized that the making of such returns in a time of war is a duty to the nation, while in normal times it is only a duty to the industry.

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#### A TEN-HOUR WORKING DAY

The greatest problem which will face the American people during the immediate future is the problem of food production. A strenuous effort is being made to increase the crop areas. Planting is but the first step in farm production. Throughout the breadth of the land an enormous diversion of farm labor is being made, not only for enlistments in the army and navy, but to factories for the production of all kinds of manufactured goods. In addition to the lure of the city, extraordinary wages are being offered. The certainty of employment together with the relaxed discipline, which necessarily follows when the supply of labor is less than the demand, is making a drain upon the supply of farm labor which must be met if the crop production of the country is to be increased. It is evident that under past working conditions there is not sufficient labor in the country to increase the products of the mine, the factory and the farm, and that the withdrawal for the army and navy of a half million men will greatly intensify this shortage. It may be that in this country as in Europe women will be required to undertake this additional service on the farm, but this should not be required until the men are working to full capacity. To meet the necessities of domestic and foreign consumption, the products of our mines, our farms and our factories must be increased at least 25 per cent. This shortage can

only be met by the increase of the productive capacity of the remaining labor supply. It means that we must go upon a ten-hour-a-day working basis in the place of our present eight-hour system. It is not a question of wages. Our present requirements will necessitate much of waste. The question of wages will necessarily become a matter of book-keeping, but the service must be rendered if this country is to meet its responsibilities. The president of the United Mine Workers of America has recently stated that the coal miners of the country could produce all of the coal required in commerce by working four hours daily. Whether this statement is literally true or not, it is true that by increasing the hours of service at least half of the men now engaged in mining can be released for work upon the farms. This same principle applied to other lines of production will supply the required labor to so increase our food supplies as to meet the requirements. It is no time to quibble over the niceties of contracts, or the future relation of labor and capital. It is time for every man to render the very best service of which he is capable to the fullest measure. A great national emergency requires it. Let us meet that emergency now and arrange our adjustments after the emergency has been met.

## MINING CONGRESS PLEDGES

### AID TO GOVERNMENT

Every possible assistance will be rendered the government by the American Mining Congress during the existing emergency. That all its energies may be used to that end the executive committee and board of directors of the Congress have decided to abandon the next annual convention. The action was taken on the suggestion of Walter Douglas, the president of the Mining Congress in a letter to Secretary Callbreath, which reads as follows:

"With the declaration of war and the mobilization of all the military and industrial forces of this country for a vigorous and effectual campaign, it appears to me that every effort of our Congress, as an organization, and its members as

individuals, should be offered to our Government for such National use as it sees fit. I would suggest that the Secretary of the Interior, through the Hon. Van H. Manning, director of the Bureau of Mines, be respectfully advised that this Association, with a membership consisting of representatives of every branch of the mining industry is ready and desirous of co-operating in every way possible in rendering assistance to his department in the arduous task before it.

"I would also propose for the earnest consideration of our membership, the temporary abandonment of the annual convention, which would but detract from the great object for which we are all striving. Our own ambitions and hopes must now be made subservient to our National policy and it behooves us all to work with a single purpose for the attainment of those democratic ideals which have been placed before us so clearly and emphatically by the President of the United States."

## THE BURDENS OF WAR

The backs of the world's toilers will be galled by the cost of the present war for centuries. Except under peculiar conditions, waste always means want. One day of the present carnage results in a greater waste and expense than was created by the Thirty-Year War. The direct burden will fall most heavily upon the people of the nations involved and to the extent that they are involved. The indirect burden will reach every consumer within the bounds of civilization. It will fall with greater force upon the workers, and with particular force upon the wage-earners. In the nature of things, it is not possible to advance wages in proportion to the increased cost of life's necessities created by the enormous waste of war. The farmer, while paying more for his sugar, will get more for his wheat. The manufacturer, while paying more for his supplies and labor, will have the benefit of a non-competitive market. The middleman's profits are based on a percentage of cost. The higher the cost of an article, the greater the profit. Increases in the cost of all supplies have



been in progress for years. These will be accelerated during the present war conditions and the enormous demand created by the great war waste. It has been said that in times of peace we should prepare for war. It is equally true that in time of war we should prepare for peace. The day is inevitable when there must be an enormous shrinkage in the prices of all products. This general shrinkage will, to some extent, affect the question of wages, but the law of the past has been that wages are the last thing to be affected, either by the increase or decrease of the general average of prices. The burdens of war will be felt by all, but let us hope that a far-seeing statesmanship may devise means by which these burdens will fall upon those most able to bear them.

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### THE RIGHT TO A JOB

Every man who is willing to work is entitled to a living. To the extent that superior intelligence or education increases the productiveness of his labor, he is entitled to increased compensation. He who, by the practice of economy or industry, is able to accumulate productive power, is entitled to advantage therefrom, whether it be intellectual power or the machinery of production. The boy who neglects his school work instead of devoting himself to educational preparation for the duties of life cannot expect to occupy the same position in after life as do those who have equipped themselves with greater productive powers. In either case, however, each should retain the right to control his own powers and utilize them for his own benefit in any field not involving an infringement of the rights of others. The individual has a right to work for whom he pleases as long as he pleases and upon terms to which he shall agree. The right to quit service must involve the right to discharge. The relation of employment must be reciprocal. If it is my right to demand employment, the reciprocal right of my employer to demand my service must exist, and with it my right to individual liberty has vanished. In-

dustrial slavery is that condition in which another may control my activities against my consent. Individual industrial liberty under the modern wage system must be based upon the right to quit service or the right to serve under such contract of employment as meets the approval of the individual. The employer, upon the other hand, must have an equal right to employ or not to employ, and it follows that the employer, having no right to command my service, I have no right to command employment; I have no right to a job.

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### GEOLOGICAL SURVEY'S WAR BULLETINS A SUCCESS

That the Geological Survey appreciates thoroughly the need for making information public as early as possible after it has been collected, is shown by the series of "War" pamphlets which are being issued at the present time. Extracts from these papers appear in this issue. These papers bring almost up to the moment the situation surrounding all minerals as the result of the abnormal conditions which now exist.

By contributing much valuable information, mine operators throughout the country have aided very materially in making these bulletins a success. With each mine operator furnishing his share of the information, the Geological Survey has been able to compile this data in Washington and study its meaning in a manner that is absolutely impossible to the single operator.

The "War" bulletins are a success, and the mining industry again has Director Smith of the Geological Survey to thank for a very timely and material service.

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### PREPAREDNESS

Military preparedness is made up of armies, equipment, and supplies, of men, money and materials. These also are the essentials of industrial preparedness. During war all of these elements are subject to destruction and waste, while during peace, money and material are util-

ized for the comfort and convenience of man. The United States is fairly equipped industrially. All of the elements required for the successful prosecution of war are available, or in condition to be made quickly available.

The great need of the day is generalship. The ability to mobilize these elements without destroying the machinery of production. The Council of National Defense will do well to recognize that trained productive forces should be interfered with as little as possible and utilized to the greatest possible extent.

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### ORGANIZATION IN THE COAL INDUSTRY

The recent statement that if the miners of the United States worked for only four hours a day, they could supply adequately the demand for fuel, is approximately correct in normal times, but we feel sure will not be as applied to the conditions which now exist. It is true, however, that the miners employed and the mines as now developed are able to produce a much larger amount of coal than will be necessary to meet increased demand which is probable. Mr. White's remedy is that the work day shall be reduced below the present maximum of eight hours. This remedy is in radical opposition to the conditions which will be required to bring the productive forces of this country to that high state of efficiency which will be necessary when we withdraw from their usual avocation a number of men equal to one half of the total membership of organized labor. We shall need a ten-hour day rather than a four-hour day; we shall need to release from the coal mines just as many men as possible in order that their energy may be applied to the production of food supplies and the manufacture of munitions. There must be a speeding up in every line of industry, and above all there should be that cooperation in the industry which will enable the mines to work continuously throughout the year. That permanent and continuous employment shall be provided is important at all times and a

necessity during times of war. It is only the slacker who inquires how he may be able to escape some of the responsibility. Every patriot is asking, "What can I do to serve my country?" To those who can find no other answer it can be said, "Your highest duty is to increase your personal efficiency." Every miner who is released from service at the mines can render his service by increasing farm production in such a way as to provide the food necessary in time of war and make less expensive the cost of living to those miners who remain in the mines during times of peace. Perfect cooperation in the mining industry would not only make for higher efficiency, but better the conditions of everyone engaged in that business.

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### POPULAR PUBLICATION

In these days of intense mining activity, the United States Geological Survey is being flooded with requests for information about the mineral resources of the country. One of its recent publications is proving especially useful, and is in great demand. This is the popular work entitled "Useful Minerals of the United States," Bulletin 624. It is a revised, enlarged and up-to-date edition of a bulletin published in June, 1914, which proved so popular that the 5,000 copies issued for free distribution were exhausted in six months.

This bulletin gives by States and counties the location of the principal deposits of about 500 minerals. It contains also a glossary of nearly 650 mineralogic terms. The composition, character and use of the minerals is defined. The publication is designed to answer the question, "Where does this or that mineral occur in the United States?" and, therefore, is proving highly useful to the manufacturer, business man, miner, prospector, and to scientific, educational and commercial institutions.

The authors are F. C. Schrader and R. W. Stone, geologists of wide experience, who have been connected with the Geological Survey for many years, and Samuel Sanford, geologist and editor, of



the Bureau of Mines. Their names are well known through their numerous individual official publications, and are an assurance that this new publication of over 400 pages is well worth while.

### THE WEAKEST LINK

It is frequently stated that the winning of the war depends upon our farmers. This is only true as based upon the axiom that "the weakest link must stand the strain." Every element of production must serve its purpose and meet the requirements, if the grave war undertaking which is upon us shall be most successfully carried on. It seems probable now that the weakest link in this chain is the farm. In the early days of the war the great demand for production in this country was for minerals and manufactured products. Increasing wages in these lines have drawn from the farm the labor which is essential to its highest production. We stand in need of increased acreage and we stand in greater need of intensive cultivation of that area which is put to crop. One acre well cultivated will yield more than several acres improperly cared for. Upon the farmers of the country then rests the great duty of so strengthening this link in production that it will be able to stand its share of the strain.

### NARRAMORE MADE CHIEF PETROLEUM TECHNOLOGIST

Chester Narramore of San Francisco has been appointed chief petroleum technologist of the Bureau of Mines at a salary of \$4,800. He succeeds W. A. Williams, who left the service of the Bureau January 1, to enter private employment. Mr. Narramore was born in Urnnemucca, Nevada, October 6, 1879. His higher education was obtained at Stanford University. He was graduated from its department of geology and mining in 1903. He then entered the service of the United States Geological Survey as statistician at Denver. Later he was transferred in the same capacity to San Francisco and continued in this service until 1911. From 1911 to 1915 he operated oil properties in California. In 1915 he was made deputy state oil inspector for California. He entered the service of the Bureau of Mines recently under a temporary agreement which now has been made permanent.

### BUREAU OF MINES TAKES STEP TO AID PROSPECTORS

Reflecting the demand throughout the metal producing districts of the United States for action which will do more toward the encouragement of prospecting, the Bureau of Mines has decided to publish an educational bulletin especially for the use of prospectors. Suggestions are continually reaching the Bureau of Mines as to steps which should be taken to make prospecting more profitable. Most of these suggestions, however, propose activities which are not included in the authority granted the Bureau of Mines. The bureau has no authority to help prospectors in other than an educational way. While it will be a number of months before the specialists of the Bureau of Mines, particularly in view of the increased duties which have been placed upon them by the demands of a state of war, can go into this subject with all the comprehensiveness that will be necessary, every effort will be made to place this information in the hands of the prospectors and those who may become prospectors at as early a date as possible. Chapters in the forthcoming handbook will cover the following subjects:

Necessary facts concerning geology, mineralogy and chemistry; preparation and outfitting; summary of Federal and State mining laws; methods of field work; valuation of ore deposits; early development work, surface equipment and camp buildings. Another chapter will deal with the business steps necessary to the consummation of a sale, lease or option. It also will point out salient facts as to stock and bond sales, royalties, partnerships and corporations. A complete bibliography also will be included.

### PLAN FOR BIG COAL YARD LAID BEFORE THE CONGRESS

A bill providing for a central coal yard in Washington for the use of the Government has been introduced by Representative Foster, the chairman of the committee on mines and mining. This yard is to be devoted exclusively to fuel for government use. The idea is to store in it a large reserve of coal to prevent the recurrence of a situation such as existed during a portion of the winter just past. For several weeks only the most active efforts prevented the closing of several of the government buildings due to lack of fuel. The idea of providing for such a yard came from Van. H. Manning, the director of the Bureau of Mines.

### Testing Crow's Nest Coal

Samples of Crow's Nest coal are being used in explosion tests at the experimental mine of the Bureau of Mines at Pittsburgh.

# COAL SUPPLY DECIDING FACTOR IN LOCATION OF ARMOR PLANT AT CHARLESTON

Over 100 Sites Were Considered for Big Government Plant but Fact That West Virginia Furnished Near Supply of Right Kind of Coal, With Other Advantages, Outdistanced Competitors

As predicted in the March issue of THE MINING CONGRESS JOURNAL, Charleston, W. Va., has been selected for the Government armor plate plant. Commenting on the armor plant board's decision, the Secretary of the Navy said:

"The report of the armor plant board tells its own story of painstaking investigation and unbiased decision. Twenty-nine cites were visited personally and the claims of 74 other cities were heard and considered. The selection of Charleston, W. Va., keeps faith with the people by meeting every need. Its location, in the heart of the Appalachians, gives the necessary protection from invasive attack. Economy and efficiency are guaranteed by the accessibility of raw materials. Charleston is the center of coal fields having an annual output of 30,000,000 tons, and at hand are extensive natural gas fields and crude petroleum areas. Basic pig iron is only 172 miles away and Bessemer about 60. Limestone and dolomites are available locally, and the freight cost is low on ferro-chrome, ferro-manganese and nickel. The Great Kanawha River offers ample water, and it is also possible for the Government to develop its own water power. Two trunk lines to the West and three trunk lines to the East furnish quick movement of raw materials and finished product, and water transportation to the Gulf is also possible, all at lower rates than those for competing cities.

"Charleston offers to the Government, without cost, the choice of various eligible sites, and in addition to this plant location, extends the pick of several protected gorges admirably adapted for use as proving grounds. This in itself means a tremendous saving in both money and time. As it is now, all armor plate, when finished, must be shipped for testing to Indian Head, near Washington, a slow process and expensive. This combination of plant and proving grounds is not by any means the least of Charleston's peculiar and superior advantages.

"Work will be commenced at once and driven to quick completion. Competition with private manufacturers is not the controlling idea. It is always well, as a matter of course, for the Government to make this first-hand proof of producing cost, but it is even more imperative that the Navy shall have its own practical laboratory in which the inventions of its own experts may be tested and developed."

A portion of the board's report is as follows:

"The act of Congress, approved August 29, 1916, made appropriation of \$11,000,000 for an armor plant of 20,000 tons annual capacity, to be located at a place or places approved by the General Board of the Navy, with especial reference to considerations of safety in time of war. The General Board of the Navy stated that it is in full accord with the military principle adopted by the Army War College, viz.:

"'As a general military principle, no supply depot, arsenal, nor manufacturing plant of any considerable size, supported by War Department appropriations for military purposes, should be established or maintained east of the Appalachian Mountains, west of the Cascade or Sierra Nevada Mountains, nor within 200 miles of our Canadian or Mexican borders, and steps should be taken gradually to cause to be moved depots and manufacturing plants already established in violation of this military principle.'"

The General Board stated that the adoption of this general principle would eliminate "all the cities located in the New England States, New York, Pennsylvania, New Jersey, Delaware, Maryland, District of Columbia and also such cities of Virginia, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Louisiana and Texas within 200 miles of the coasts, and the cities in Michigan, Wisconsin, Illinois, Indiana and Ohio situated within 200 miles of the Great Lakes, which serve as a boundary between the United States and Canada." But the General Board also stated that there are industrial and economic questions which should be determined upon investigation by a board of technical experts, and recommended that such investigation be conducted before final decision is reached.

The armor plant board visited the following cities: Huntington, W. Va.; Ironton, Ohio; Ashland, Ky.; Charleston, W. Va.; Cumberland, Md.; Bristol, Va.-Tenn.; Johnson City, Tenn.; Kingsport, Tenn.; Knoxville, Tenn.; Chattanooga, Tenn.; Birmingham, Ala.; Tuscaloosa, Ala.; Gadsden, Ala.; Rome, Ga.; Paducah, Ky.; Metropolis, Ill.; Cairo, Ill.; Wickliffe, Ky.; Cape Girardeau, Mo.; Keokuk, Iowa; Quincy, Ill.; Hannibal, Mo.; Louisiana, Mo.; St. Louis, Mo.; East St. Louis, Ill.; Henderson, Ky.; Evansville, Ind.; Louisville, Ky., and Richmond, Va.



In addition, the board has given hearings on its inspection trips to representatives of the following cities: Ronceverte, W. Va.; Big Stone Gap, Va.; St. Charles, Mo.; Mount Vernon, Ind.; Jeffersonville, Ind.; Middlesborough, Ky.; Clinton, Iowa; New Albany, Ind., and Owensboro, Ky.

Data was considered by the board from other cities, as follows: Anniston, Ala.; Athens, Texas; Atlanta, Texas; Bartlesville, Okla.; Bastrop, La.; Bromide, Okla.; Brookneal, Va.; Bushnell, Ill.; Cartersville, Ga.; Christiansburg, Va.; Cisco, Texas; Clifton Forge, Va.; Collinsville, Ill.; Columbus, Ky.; Daingerfield, Texas; Dillon, Ga.; Ft. Blackmore, Va.; Ft. Madison, Iowa; Ft. Payne, Ala.; Ft. Spring, Va.; Gainesville, Texas; Gilmer, Texas; Greenbrier, W. Va.; Guernsey, Wyo.; Hickman, Ky.; Hughes Springs, Texas; Jacksonville, Texas; Jefferson, Texas; Jellico, Tenn.; Jenifer, Ala.; Joplin, Mo.; Kansas City, Mo.; Kingston, Tenn.; Lewisburg, W. Va.; Litchfield, Ill.; Lomax, Ill.; Longview, Texas; Maryville, Tenn.; Mason City, Iowa; McAlester, Okla.; Mine LaMotte, Mo.; Mount Pleasant, Texas; Muskogee, Okla.; Narrows, Va.; North Carrollton, Miss.; Paris, Texas; Pittsburgh, Kan.; Pittsburg, Texas; Princeton, W. Va.; Poyner, Texas; Pueblo, Colo.; Radford, Va.; Roanoke, Va.; Rockport, Ind.; Rusk, Texas; Russell, Ky.; Shreveport, La.; Smithland, Ky.; Texarkana, Ark.; Texarkana, Texas; Thebes, Ill.; Trinidad, Colo.; Tulsa, Okla.; Waterloo, Iowa, and Vicksburg, Miss.

The cities that have been under consideration by the board may be grouped in several districts, as follows: (a) the Birmingham district, from Tuscaloosa to Rome, Ga.; (b) the West Virginia district, including Cumberland, Md., to Ironton, Ohio, and Ashland, Ky., and beyond; (c) the Eastern Tennessee and Chattanooga district, from Chattanooga to Johnson City and Bristol, including Middlesborough, Ky., and Big Stone Gap, Va.; (d) the lower Ohio and upper Mississippi River district, with St. Louis as a center; (e) the Texas and Oklahoma districts; (f) the Colorado district.

All of these districts have certain natural advantages for industrial expansion and the board was impressed with the possibilities for future development, as indicated by the growth of existing industries and the establishment of new ones. While all have natural advantages, it cannot be said that all are equally well adapted for the location of the Government armor plant. In nearly all of the places considered, tracts of land more or less suitable for the construction of an armor plant are available.

The Birmingham district possesses unusual advantages for the manufacture of low cost basic pig iron, inasmuch as the iron ore mines and coal mines occur very close together. This is one of the districts outside of the old-established steel centers where steel manufacturing plants have been developed. Undeveloped water power exists and coal fired power

plants have been able to produce power at a low cost. The climate, while having a higher average temperature than districts farther north, is said by the people who live there to be free from the extremes of climate generally experienced elsewhere. This district has rail communication to the north, the south, the east and the west, and is about 200 miles from the Gulf ports.

The Eastern Tennessee district has the advantage of close proximity to coal mines of a high grade, as well as convenient access to the pig iron markets. The various cities may draw on the mountain population as a labor market. This district is located about equidistant from the Great Lakes, the Gulf of Mexico and the Atlantic Ocean. The Chattanooga district is in reality about halfway between the Birmingham and Eastern Tennessee districts and possesses some of the advantages of both. Its rail transportation facilities extend in all directions.

The St. Louis district, including cities on the Mississippi, both above and below St. Louis, as well as cities on the lower Ohio River, has the primary advantage of a possibility of transportation by the great Mississippi River system with its effect on freight rates. To the south and west are lands with marked undeveloped natural resources, which point to a great future development of the St. Louis district. The coal mines of Illinois and Indiana are close by, and iron ore, after transportation systems have been more fully developed, can be obtained from the great iron ore regions of Minnesota as well as from the Birmingham district. Railroad transportation systems are numerous and very highly developed in this region.

The Colorado district possesses an excellent coal field and has a local supply of pig iron. Trunk lines of railroads extend in all directions.

The Oklahoma and Texas districts possess very considerable amounts of raw materials, mostly in an undeveloped state. The transportation systems are also being developed. The cost of assembly of raw materials at the present time is in excess of that of more favorably located points.

The West Virginia district has the great advantage of near access to some of the best coal mining regions in the United States. Pig iron markets are not far removed; oil and natural gas are available; water power plants may be developed to a certain extent, although the cheap price of coal makes it possible for coal-fired power plants to compete with the hydraulic power. This district is closer to the great steel industrial labor market of Pennsylvania, and the cost of assembly of raw materials is very low.

The object in providing a Government armor plant is to secure armor at a less cost than has heretofore been obtained by purchase from private contractors, while the Navy Department may have at the same time a



more complete control over the improvement and development of armor through experimental work and competition with private manufacturers. The plant should, therefore, be so located that armor may be manufactured at the lowest total cost; be not subject to interruption or interference either in time of peace or war, and in a community where local conditions are favorable. Should the armor plant through force of circumstances, or due to considerations of safety in time of war, be placed in an area where the steel industries have not successfully operated, or where, for other reasons, the Government cannot compete with private manufacturers and bring about a reduction in the cost of armor, then the object of providing an armor plant will not be obtained.

Three principal elements enter into the location of the plant. The operating force is the most important, and included not only common labor and mechanics but also the necessary foremen, supervisory force, technical assistants and administrative heads. The raw materials of suitable quality must be available at the lowest combined original cost and freight rate and, finally, the cost of delivery of the finished product. In addition to these the following must be taken into consideration: Possible changes in the process of manufacture, embracing a change to oil or powdered coal as a fuel or the adoption of the electric furnace; the proximity of low cost power; an ample water supply, and a satisfactory local site. To properly consider the problem involves a close knowledge of the process of manufacturing armor and a consideration of probable future developments. These factors were considered as fully as possible by the board in its deliberations. Further comments under the individual headings are given in accompanying report.

After investigating the industrial and economic questions which the General Board recommended be done before final decision is reached, the armor plant board finds that the most suitable location for the Government armor plant, based on considerations of safety in time of war, cost of assembly of raw materials, the availability of satisfactory labor, the advantages to be derived from location in a highly organized industrial center, the shipment of plates to the seaboard, and the total cost of the finished product, will be in the Pittsburgh district, including the upper Ohio River valley. The investigations show that an armor plant can be more successfully operated in this district than in any of the localities included within the limits outlined by the General Board prior to these investigations. It is, therefore, recommended that the armor plant be located in the Pittsburgh district.

The board having determined that the Pittsburgh district is the best location for the armor plant has also carefully weighed the relative advantages of the several districts within the limits of safety, as outlined by

the General Board, and finds that the West Virginia district, from Cumberland, Md., to Ironton, Ohio, possesses more advantages than any of the others. Within this district Charleston, W. Va., and Cumberland, Md., are the most favorably located, in the order named. The first possesses the advantage of the low cost of assembled materials and favorable local conditions of the site, while the second possesses the advantage of being in closer proximity to the best labor and supply market in Pennsylvania and the distribution of the finished products of the plant.

The board recognizes the value of the claims set forth in the briefs of various cities within the safety area, but considering all conditions, it is believed that none are more favorably located within this area than those of Charleston, W. Va., and Cumberland, Md.

Aside from the location of the plant in a district like Pittsburgh, based upon purely industrial and economic grounds, the board recognizes the many advantages that would accrue from having the plant located in close proximity to the present gun factory and proving ground on the Potomac River in the vicinity of Washington. The output of the armor plant, particularly if it is combined with a projectile and gun forging plant, will be so closely associated with the work of the gun factory and proving ground that the advantages in administration, in experimental work and development, and in avoiding costly delays would offset the increased cost of raw materials.

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#### **KANSAS APPROPRIATES FOR MINE RESCUE STATION**

An appropriation of \$17,500 has been made by the legislature of Kansas for purchasing a site in Crawford County for constructing a central mine rescue station and for purchasing sites and erecting buildings for mine rescue substations. This appropriation is to include expenditures for equipment, salaries and maintenance. Some disappointment has been expressed by mine operators in Kansas that the amount appropriated should not have been larger. There is no tendency to be ungrateful, however, as it is regarded that this step is considerably in advance of any other states having more extensive mining interests than has Kansas. That it will be an opening wedge is the general belief and more liberal appropriations are expected to follow.

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#### **District Engineer Resigns**

With the resignation of H. I. Smith, the district engineer of the Bureau of Mines, in charge of its Urbana, Illinois, station, the Bureau has lost another one of its capable experts to private employment. Such inroads are being made upon the technical staffs of the Bureau of Mines and the Geological Survey that the discontinuance of much important work is threatened.



### GOVERNMENT EXPERTS WELL KNOWN TO MINING MEN



*Photo by Harris & Ewing*

CARL E. JULIHN  
Mining Engineer

Carl E. Julihn was born in Washington, D. C. His early education was obtained in the public schools here. His higher education was acquired at the Colorado School of Mines, at Columbia University and at the University of California. He gained his E. M. at Columbia in 1904. His first actual experience was obtained as manager of the Park-New Era coal mines, in Broadwater County, Montana. His next position was as manager of the Paquita silver mine in Oaxaca, Mexico. After a year in Mexico he undertook general examination work with Benjamin B. Lawrence, of New York. Most of his work was confined to mines of the Northwest and of British Columbia. From 1906 to 1912 Mr. Julihn managed mines, did some consulting and examination work, after which he took a post-graduate geological course at the University of California. Until 1915 he did consulting work on the Comstock.

While working as geologist at the Cerro Gordo mine in Inyo County, California, he was offered a position as mining engineer with the Bureau of Mines, which he recently

has accepted. He has been assigned to a general study of nickel and cobalt in the United States. This study is to be made with the object of ascertaining what possible supplies of these metals could be obtained if the United States should be compelled to rely entirely upon its own resources. In this connection he expects to make a study of the literature on the subject and will make a trip to Ottawa to study the general situation surrounding the mining of these minerals in Canada. After this preliminary work he expects to return to the United States and make an effort to locate all deposits of these metals and to study their potentialities.

### NEW MINES NOT LIKELY TO AFFECT COAL OUTPUT

Bituminous coal production is not likely to be affected greatly by the new mines which are being opened. Owing to the fact that numerous small properties are being worked at this time, statistics showing the number of operating mines are misleading. Some persons have jumped to the conclusion that the increase in the number of mines is going to result in increased production. George Otis Smith, director of the Geological Survey, in commenting on this angle of the present situation says:

"If the assumption of many operators is correct that the labor supply will be the limiting factor in the production of coal this year, rather than transportation facilities, it is apparent that the opening of new mines will not augment the production greatly. This will be true because with the supply of men for mining coal limited practically to those now so engaged, new mines will be able to operate to the extent only that they are able to draw labor from the old mines. The output from the new mines will little more than offset the decreased production of the older mines through loss of men."

### ELECTRIC METALLURGICAL PLANTS BEING INSPECTED

An inspection of all electrical metallurgical plants in the Northwest has been undertaken as a part of the work of the Seattle station of the Bureau of Mines. F. C. Ryan is doing the field work.

### Buys New Mill

Neil MacDonald, of New York City, who has large holdings in several mining properties in southern California, has ordered from the Denver Quartz Mill and Crusher Company one of their No. 2 Denver Quartz Mills and other equipment for a new mill he is building near Hemet, Calif. His ore is free milling and the values will be saved by amalgamation.

# UTAH LEGISLATURE SINGLES OUT THE MINING INDUSTRY FOR TAXATION

Agreement Worked Out by Mine Operators and Representatives of the Law-Making Body is Ignored as Drastic Bills are Jammed Through on Final Day of Session

By A. G. Mackenzie

Salt Lake City, April 24.—“Soak the Mines” was the slogan of the late Utah Legislature, frankly and frequently announced by many members and supported by the administration. Efforts to ascertain the causes of this attitude toward the industry invariably led to a common source—the great recent prosperity of the mines of the State, especially one or two of the larger properties.

The Governor, in his first message to the legislature, recommended the submission of a constitutional amendment to tax mine proceeds at three times their actual value, a proposal which the people of the State overwhelmingly defeated at the polls last November. Various propositions on the subject of mine taxation were suggested, and some of them had been introduced in the legislature, when a meeting of mining men and members of the legislature was arranged at the suggestion of the Governor near the close of the session. Ten members of the legislature, including some of its ablest members, met with representative mining men and devoted an entire day to working out a tax program, which was accepted by the legislators present and by the mining representatives. This plan was so completely ignored that no measure relating to it was introduced in either house of the legislature. The final outcome of the session was the passage of a resolution proposing another constitutional amendment on mine taxation and the passage of a law imposing an “Occupation Tax” on mining.

The circumstances attending the presentation and passage of these two measures are interesting and illustrative of the consideration the mining interests received. The occupation tax was introduced at noon on Saturday, March 10, and the proposed amendment was introduced at 10 o'clock that night. Both were passed before the legislature adjourned finally at midnight of the same day. Of course, there was no hearing or any attempt to have a hearing on either measure, although both contained new propositions which the mining interests had no opportunity whatever to consider. Many members of the legislature voted on the measures without having had an opportunity to read them. This was publicly stated by several members on the floor. The proposed amendment, which was originally introduced in the House, was changed so that when it came back to the House from the Senate its author did not vote for it.

The measures were opposed by some members of both houses, who resented the unrea-

soning animosity toward so important an industry as mining is in Utah, but these members, unfortunately, were a minority. Both measures passed, and have been signed by Governor Bamberger.

The proposed constitutional amendment would amend the constitution of the State so that metalliferous mines shall be assessed at \$5 an acre on their surface ground and “at a value based on some multiple or sub-multiple of the net annual proceeds.” Coal and other non-metalliferous mines and machinery and surface improvements of all mines are to be assessed at their full value. The assessment and taxation of mining property is placed in the hands of the State Board of Equalization under the proposed amendment.

The present constitution of Utah provides that surface ground shall be taxed at the price paid the Government therefor, net proceeds at their actual value, and machinery and improvements on the same basis as other property.

The announced purpose of the amendment now proposed is to give the State Board of Equalization power to assess mining property at its discretion, and, it will be noted, no maximum limits are contained in the proposed amendment. This measure will be submitted to the people of the State at the general election in November, 1918.

The so-called occupation tax on mining has some extraordinary features besides its history. An eminent attorney, former United States Senator Joseph L. Rawlins, who was retained by the legislature as its legal expert, advised the legislature before the bill was passed that it was unconstitutional. Other attorneys join in this opinion. The law provides for a tax of \$1 a year for each person or corporation engaged in mining and a tax equal to 2 per cent of the net annual proceeds, both in addition to the taxes already provided by law. A proviso in the bill is that for the year 1917 the tax on net proceeds shall be 3 per cent. This proviso was put in, it was announced, in order to make the mining companies pay part of what they could have been made to pay had the people of the State not defeated the proposed amendment last fall.

The occupation tax will not be assessed until the early part of 1918, payable in September, 1918, and the tax on net proceeds thereunder will be based on the production of 1917.

It is believed by many that the inability of certain members of the legislature to force



the enactment of a general State income tax was responsible, in part, for the assault on the mines. The Governor declared vigorously and repeatedly that he would not stand for an income tax, as he said it would discourage investment in the State. A general income tax measure was passed by the House and defeated in the Senate.

#### WORKMEN'S COMPENSATION

The Workmen's Compensation Law of Utah, enacted at the session of the legislature which ended in March, provides for a bi-partisan industrial commission of three members, at an annual salary of \$4,000 each. In addition to its jurisdiction over accidental injuries, the commission has jurisdiction over safety appliances, etc., is empowered to promote arbitration of industrial disputes, to establish free employment agencies, and to supervise private agencies. The commission also takes over the duties of the State Coal Mine Inspector, the Commissioner of Immigration, Labor and Statistics, and the Board of Conciliation and Arbitration.

The law provides for an elective system of insurance. The employer may insure in the State fund, in a stock or mutual company, or may carry his own risk upon proper showing of responsibility or filing of bond. The law also permits the continuation of private compensation systems, with the approval of the commission, where the benefits are equal or greater than those provided by the new law. No assessment is permissible on employees except where additional benefits are offered.

All employers of four or more persons, except agricultural laborers and domestic servants, are brought under the operations of the law. Employers of less than four may come under the law if they desire. The law also includes all State, county, city, town and school district employees, except elective officers and officers whose compensation is more than \$2,400 a year. An appropriation of \$40,000 was made to start the State insurance fund, which is to be kept up by the income from premiums, penalties, etc. Ten per cent of the State fund is to be set aside for surplus until the surplus amounts to \$100,000,000, after which 5 per cent is to be set aside. Rates of premiums on insurance are to be fixed by the commission, but have not yet been announced.

The "waiting period" in the new law is fixed at ten days. Compensation in case of temporary disability is fixed at 55 per cent of the average weekly wage, with a maximum of \$12 a week and a minimum of \$7 a week. The total compensation is not to exceed six years in time or \$4,500 in amount. In case of partial disability, compensation is fixed at 55 per cent of the difference between the average weekly wage before and after the accident, with a maximum amount of \$12 a week and a maximum period of six years. In case of total disability, compensation is fixed at 55 per cent of the wage for five years and

40 per cent thereafter until death, with a maximum of \$15 and a minimum of \$5 a week.

The law does not take full jurisdiction over accidents resulting in death, as a provision of the State constitution prevents limiting the compensation for death. The law provides, therefore, that the heirs of a person meeting accidental death may accept compensation under the new law or sue in the courts, at their option. In case a judgment is rendered against the employer in court, he is entitled to claim the amount of compensation that would be paid under the new law and apply it against the judgment rendered.

Where an employee is killed by accident and has no dependents, the employer is required to pay burial expenses and also to pay \$750 into the State insurance fund, except when the employer carries his insurance in the State fund. Where the decedent leaves dependents, the compensation is fixed at 55 per cent of the average weekly wage, not exceeding \$15 a week for six years, with a minimum of \$2,000 and a maximum of \$4,500.

Citizens and aliens come within the operations of the law on the same basis.

The industrial commission appointed by Governor Bamberger consists of P. A. Thatcher, a business man of Logan; William Knerr, of Salt Lake, labor representative, and H. E. Jenkins, of Salt Lake, an insurance man. Mr. Thatcher is chairman.

The work of the commission has been divided as follows:

Mr. Thatcher—Superintendent of safety mining inspection, general inspection, and first aid.

Mr. Knerr—Compensation hearings, legal department, employment bureaus, trade disputes, women and child labor laws, medical department, and publicity.

Mr. Jenkins—Insurance manager, auditor-claims department, and medical insurance department.

The commission, as a body, will have supervision of the general affairs of the board, including public hearings, committee meetings, compilation and publication of statistics, correspondence, filing, accounting, mailing, and other matters. The board as a whole will act as a board of conciliation and arbitration of labor disputes. Mr. Knerr will have charge of all hearings on disputes between employees and insurance carriers.

The law becomes operative July 1, 1917.

#### Reorganize Fuel Department

Carl Scholz, former president of the American Mining Congress, and manager of the mining and fuel department of the Chicago, Rock Island and Pacific Railroad Company, has just sent out a circular announcing the resignation of D. B. Sebastian and the reorganization of his department. Effective April 1, C. T. Winkless is appointed superintendent of fuel; W. J. Eddy is appointed superintendent of fuel economy.



## MISS BLISS MAKING A STUDY OF OLD NICKEL MINES



*Photo by Harris & Ewing*

MISS ELEANOR BLISS  
Geologist

Miss Eleanor Bliss was born in Rosemont, Pa. Her education has been obtained at Baldwin School, Bryn Mawr, Pa., Bryn Mawr College and at the University of California. She took her A.B. and A.M. at Bryn Mawr in 1904 and her Ph.D. at the same institution in 1912. Her first geological work was done in the Philippines.

Miss Bliss became a member of the geologic staff of the Geological Survey in 1912. Her work has been confined to quadrangles in California and Pennsylvania. Just at this time Miss Bliss, who is the daughter of Gen. Tasker H. Bliss, assistant to the chief of staff of the army, has an assignment covering the quadrangle which contains the Old Gap nickel mines of Lancaster County, Pennsylvania. She has made a petrographic study of the formation encountered in these mines. This work is of particular interest at present owing to the demand for information with regard to United States nickel deposits.

James S. Douglas, manager of the United Verde Extension Mining Company, Douglas, Ariz., has been spending some time in the East with his father, Dr. James Douglas, and his brother, Mr. Walter Douglas.

## EXPLOSIVES BILL LIKELY TO PASS AT THIS SESSION OF CONGRESS

Little opposition to a bill providing for the regulation of the manufacture, distribution, storage, sale, use and possession of explosives in time for war developed at hearings on the measure which were conducted recently before the House Committee on Mines and Mining. The bill empowers the President to enforce such orders, rules and regulations as may be agreed upon for this regulation. The regulations are to be drawn up and administered by the Bureau of Mines. Since the mining industry is one of the largest consumers of explosives, wide interest has been manifested in the matter. Representatives of the mining industry, testifying before the committee, indicated that they have great confidence in the ability of the Bureau of Mines to administer such regulations properly. It was brought out at the hearing that drastic regulations with regard to the handling of explosives would hamper the mining industry very greatly unless administered with great care and judgment. It was made very clear, however, that the operators have confidence in the Bureau of Mines, and believe that such regulations can be enforced in such a way by the bureau as not to interfere with legitimate industry and at the same time enable the Government to keep a close check on all who possess explosives.

Representative Foster, the chairman of the committee, anticipates a favorable report on the bill. Since it is a war measure, it is assured of consideration by Congress. It is expected that this bill will become a law at this session. An appropriation of \$250 000 is provided to carry out the purposes of the act.

Van H. Manning, director of the Bureau of Mines; George R. Rice, chief mining engineer; W. R. Ingalls, and G. G. Rheuby, general counsel of the Hercules Powder Company, were among those who testified before the committee.

## Pioneer Rescue Man Dies

William A. Raudenbush, formerly a foreman miner of the Bureau of Mines, who died recently at Harrisburg, Pa., was one of the pioneer rescue men of the Bureau of Mines. He was a man of initiative and daring. He attended many serious disasters, was often placed in charge of crews and led the work of rescue with the spirit of a fearless, brave man. He was with the bureau in its most trying days, when the life-saving work was new and strange to operator and miner. Under difficult circumstances, with the suspicion that usually surrounds the beginning of new movements, Raudenbush not only acted his part as a rescue man, but also conducted himself in a manner that brought credit to the bureau.



### WOULD EXCUSE MINERS FROM ASSESSMENT IF THEY ENLIST

Under the mining laws, owners of claims are required, in order to hold their claims, to perform assessment work in the development of the claims to the extent of \$100 worth of work each year until they obtain their patents.

A bill has been introduced in the House by Representative Hayden of Arizona to relieve from the necessity for doing this assessment work claimants who have been mustered into the military service as officers or enlisted men of the organized militia or National Guard during the period of their service.

In reporting upon this bill to Congress, Secretary Lane, of the Interior Department, recommended that it be amended so as to include all officers and enlisted men in the Army, Navy, Marine Corps, or organized militia of the United States who have been or may be mustered into the service during the period of actual war, and with this amendment the Secretary recommended the enactment of the legislation.

### COMMENTS ON PRICES FOR GOVERNMENT PURCHASES

Washington Herald:

We were very much interested in the announcement that the copper producers of the country had, as a whole, offered to sell 45,000,000 pounds of copper to the navy at between 16 and 17 cents a pound, whereas the present price for copper is much nearer 30 cents a pound. The price quoted was based upon the average price of copper for the last ten years.

Of course, the amount of money involved in this order was negligible—only about \$7,500,000. But there is a principle involved which we think is important. It is a fine thing to see every class of our citizens exhibiting an earnest desire at this crisis to be of real service to the government. But there are two sides to the picture. Under the military law that was passed last summer, the government has practically the right to buy supplies of every kind from producers in this country at a price to be fixed by the government itself. With such power in its hands, the government, of course, is bound to deal fairly by producers.

That being the case, we are of the judgment that, as a whole, producers and manufacturers would best serve the interests of the government and of their own shareholders (whose property, it must be remembered, they are dealing with) by allowing the government to fix prices for various commodities. For instance, if the price of 16 cents quoted for copper represents only about one-half the market price of copper, and if this is a precedent to go upon, then the producers of wheat, namely, our farmers in the West; the producers of cotton, namely, our planta-

tions in the South, ought also sell to the government its requirements at approximately half the market price.

If these classes of producers fail to do this, then it seems to us the producers of copper will have done their shareholders, to whom they must render accounting, a grave injustice in making a quite unnecessary sacrifice. The shareholders must, of course, pay handsomely anyway through the new excess corporation profits tax. Why should they be obliged to sacrifice any more than any other class of producers?

In other words, we think that the government, as it has the right to do under the law, should lay down a principle that, with certain slight variations which circumstances might require, should apply to all industries which are to serve the government with supplies. What is sauce for the goose is sauce for the gander. If the government thinks it wise to force the farmers to sell grain at half the market price, and the cotton plantations as well, that is entirely satisfactory to us; but we think every other industry should conform to the same practice.

We have heard it rumored that certain steel manufacturers were about to make material sacrifices in prices quoted to the government, just as the copper producers have done. Far be it from us to urge against this course, but we simply want to point out to these undoubted patriots that there are two considerations in this matter.

### REGIONAL BANKS REPORT ON MINING CONDITIONS

Report to the Federal Reserve Board from regional banks contain the following views having a bearing on the mining industry:

"Financial operations in all mining centers have increased greatly in volume. Eastern steel mills are making increased purchases of tungsten. Colorado is bringing in some new copper production. New ore bodies are being opened in the Cripple Creek region by carrying mining operations to greater depths. The demand for American silver will be increased by China's action in stopping silver exports. Operation of all copper mines in the southwest is being conducted at full capacity. Prospectors and small property owners have benefited very decidedly from the prosperity which is characterizing the mining industry. The transportation situation continues to be the determining factor in the matter of coal supply in several mining districts. Extreme fluctuations of coal prices have ceased since the settlement of the threatened railroad strike. There has been a marked decrease in labor troubles in mining regions during the past month. The shortage of coke is expected to continue for some time despite the fact that the production is being increased somewhat. Labor shortage is reported from many of the important mining regions."

# COUNTRY CONFRONTED WITH MOST SERIOUS FUEL SITUATION IN ITS HISTORY

Consumers of Coal are Being Urged by the Geological Survey to Store Coal Now—  
Prices Certain to be Higher This Fall When Difficulties of Transportation  
Will be Much Greater Than Now, it is Pointed Out

That the country is confronted with the most serious fuel situation in its history is admitted by government specialists in close touch with all angles of the situation. The War Department is considering the exemption of mine workers from military service. It will be recalled that several of the European countries made the mistake of allowing their coal miners to go to the front and later were put to the necessity of recalling them from the trenches. It is practically certain that any compulsory service will provide for the exemption of coal miners and other skilled laborers. It is admitted that the prosecution of the war will put a conditional tax upon the transportation facilities of the country. The needs for coal will increase rapidly as the nation concentrates its industrial efforts to supply huge stores of war materials. The navy will require more coal and if the tonnage can be found there will be a demand for exports of coal for the navy of the allied countries.

Full advantage must be taken of the summer months to store fuel supplies, it is pointed out at the Geological Survey. If consumers large and small will dismiss any idea of securing coal cheaper this fall and lay in their supplies as quickly as possible a patriotic service will be rendered the country. From present indications the car supply of the country is going to be entirely inadequate to the demands placed upon it this fall. It is believed, however, if all rolling stock is utilized to its full capacity during the summer, sufficient coal can be stored at the point of consumption to relieve the situation greatly this fall. Plans are being considered to conduct a campaign of education with the idea of bringing these facts to the attention of as many of the people as possible.

## GOVERNMENT BROADENING SCOPE OF MINERAL REPORTS

The division of mineral resources of the United States Geological Survey, which is responsible for the annual reports, "Mineral Resources of the United States," is divided into two sections—the "metals section," which prepares the reports of Part I, and the "non-metals section," which prepares those of Part II, including fuels, structural and chemical materials (other than metal), and other non-metallic products. Ernest F. Burchard is geologist in charge of the nonmetals section,

and H. D. McCaskey is charged with the administrative supervision of the division, of the metals section, and of the western offices of the division.

These western offices were established primarily for the collection of data for the annual mines reports on the precious and base metals of the Western States, but they have been brought into such close touch with the mining industries across the country generally that they now cooperate with the Washington office on many branches of the mineral resources work, and also serve the mineral industries and the public at large throughout the West as general bureaus of information and of distribution of Survey publications. The statisticians in charge are Charles W. Henderson, of the Denver office, 409 New United States Postoffice Building; Victor C. Heikes, of the Salt Lake City office, 312 United States Postoffice Building, and Charles G. Yale, of the San Francisco office, 305 United States Customhouse. Mr. Henderson is author of the mines reports for Colorado, South Dakota, Wyoming, New Mexico, and Texas; Mr. Heikes (assisted by C. N. Gerry) is responsible for the mines reports for Utah, Nevada, Arizona, Montana, Idaho, and Washington, and Mr. Yale contributes the mines reports for California and Oregon, and is author also of the current reports on borax and magnesite.

The division of mineral resources works in close cooperation with the division of geology, and most of the reports on mineral resources are now prepared by geologists working in both divisions who specialize on the subjects treated by them. The advantage of the services of these specialists, familiar with the occurrence, treatment, and use of the mineral substances, is well recognized, and has broadened the scope and usefulness of the reports.

The authors named in the following list have prepared the reports indicated for 1915:

General:

H. D. McCaskey—Mineral production of the United States (introduction).

Martha B. Clark—Mineral production of the United States (summary).

Metals:

Alfred H. Brooks—Gold, silver, and copper in Alaska (mines report).

Ernest F. Burchard—Iron ore, pig iron, and steel.

B. S. Butler—General report on copper; silver and copper in Michigan (mines report).



J. S. Diller—Chromic iron ore.

John P. Dunlop—Silver, copper, lead, and zinc in Central States, except Michigan (mines report); metals and ores (a summary); statistics of secondary metals; general report on gold and silver (with H. D. McCaskey).

Clarence N. Gerry—Gold, silver, copper, lead, and zinc in Idaho and Washington (mines report).

Victor C. Heikes—Gold, silver, copper, lead, and zinc in Arizona, Utah, Nevada, and Montana (mines report).

Charles W. Henderson—Gold, silver, copper, lead, and zinc in Colorado, New Mexico, South Dakota, Wyoming, and Texas (mines report).

Frank L. Hess—Tin, arsenic, antimony, bismuth, selenium, tellurium, tungsten, vanadium, uranium, radium, nickel, cobalt, titanium, tantalum, and molybdenum.

D. F. Hewett—Manganese and manganese ores.

James M. Hill—Platinum and allied metals; gold, silver, copper, lead, and zinc in the Eastern States (mines report).

H. D. McCaskey—General report on gold and silver (with J. P. Dunlop); quicksilver.

W. C. Phalen—Bauxite and aluminum.

C. E. Siebenthal—General reports on lead, zinc, and cadmium.

Charles G. Yale—Gold, silver, copper, lead and zinc in California and Oregon (mines report).

Nonmetals:

E. S. Bastin—Graphite.

Ernest F. Burchard—Fluorspar and cryolite; cement.

J. S. Diller—Asbestos; talc and soapstone.

R. B. Dole—Mineral waters.

James M. Hill—Barytes and strontium.

Frank J. Katz—Abrasive materials; silica (quartz); feldspar.

C. E. Leshner—Fuel briquetting; coke; coal (Part A, production; Part B, distribution and consumption); artificial gas.

G. F. Loughlin—Slate; lime; stone.

Jefferson Middleton—Clay-working industries; sand-lime brick; fuller's earth.

J. D. Northrop—Asphalt, related bitumens and bituminous rock; petroleum; natural gas.

W. C. Phalen—Phosphate rock; salt, bromine and calcium chloride; potash salts; sulphur, pyrite and sulphuric acid.

Waldemar T. Schaller—Gems and precious stones; mica.

Ralph W. Stone—Gypsum; sand and gravel.

Charles G. Yale—Borax; magnesite.

### Douglas Visits Washington

Walter Douglas, president of the American Mining Congress, and recently appointed president of the Phelps-Dodge Corporation, New York City, upon the retirement from active life of his father, Dr. James Douglas, spent several days in Washington last month and discussed various phases of the Mining Congress work and future plans with Secretary Callbreath.

### MINING FELLOWSHIPS ARE PRAISED BY METALLURGIST

No greater field for constructive endeavor along mining lines exists in the United States than in the Northwest, according to Dorsey A. Lyon, the superintendent of the Seattle experiment station, who is in Washington conferring with Van H. Manning, the director of the Bureau of Mines, and with F. G. Cottrell, the chief metallurgist.

The principal activities of the Seattle station were summed up comprehensively in the last issue of the Journal. Mr. Lyon points out, however, that in addition to the broad plans for the work, each day is developing important matters wherein the Government's specialists are enabled to render distinct service to the mining industry of the Northwest and to all other mining regions where the same problems are presented.

One of the important ways by which the Government hopes to carry its high standard of ethics and of conservation into practice is through fellowships established with universities. This plan has proven so successful at the Salt Lake City station of the Bureau that it has been inaugurated immediately at the Seattle station. The University of Washington has offered five fellowships at \$720 each. These fellowships may be had in any one of the following subjects: Electro-Metallurgical Processes; Beneficiation of Coal and Nonmetallic Minerals; Clay Industries and Ceramics; General Problems Affecting the Ores and the Mining Industries of Washington; Development of Metallurgical Industries.

Through these fellowships the Bureau of Mines receives the assistance of ambitious students who are eager to accomplish results and absorb instruction. With the completion of their work, under the direction of the members of the Bureau of Mines' staff, they go out into the industry and carry with them the ideas the government and the progressive element in the industry are most anxious to have propagated. That the value of men who have had the advantage of this training is appreciated is demonstrated by the fact that those having taken the fellowship work at the University of Utah were in great demand among mining companies.

### Decide Big Muddy Case

In the case of the Big Muddy Coal and Iron Company vs. Illinois Central Railroad Company, the Interstate Commerce Commission held that: Rates on bituminous coal in carloads from mines in the southern Illinois group to St. Charles, Mo., are unduly prejudicial as compared with the rates on the same commodity from the Belleville, Ill., group to St. Charles. A proper relationship of rates was prescribed for the future.

# GASOLINE PRICES ARBITRARILY INCREASED, SAYS FINDING OF TRADE COMMISSION

## Report to Senate Holds that Standard Oil Interests Dominate Refining, Pipe-Line Transportation and Marketing of Gasoline Industry—Drastic Recommendations Made

The Federal Trade Commission, in a report transmitted to the Senate recently, finds that Standard Oil interests substantially dominate the gasoline industry—refining, pipe-line transportation, and marketing.

Despite dissolution of the so-called "Oil Trust" by the United States Supreme Court, the Commission concludes that Standard Oil domination has had a "fundamental bearing" upon gasoline prices, declared to have been arbitrarily increased.

In an exhaustive report of its investigation, under resolutions of Senators Gore and Owen of Oklahoma and its statutory authority, the Commission declares, in substance, that real competition does not exist between the various Standard Oil companies because of interlocking stock ownership through the holding of a majority of shares in the constituent Standard companies by identical interests.

Legislation to meet these conditions is recommended by the Commission. Also its evidence and findings have been transmitted to the Attorney General for appropriate action.

The principal findings of the Commission are:

That in a majority of marketing territories the Standard companies are dominant.

"That the several Standard companies have maintained a distribution of territory in the marketing of gasoline, and that no substantial competition in the chief petroleum products exists among the several Standard companies."

"That this absence of competition is due to a community of stock ownership."

"That the facts disclose such advances in prices of gasoline and such differences in price corresponding to Standard marketing territories as are not possible of explanation apart from the foregoing conditions."

"The Commission has not found conclusive evidence of collusion among the various standard companies in violation of the dissolution decree."

That "the combination of pipe lines with the other branches of the industry has tended to establish and perpetuate monopoly."

That gasoline has deteriorated in quality, a variety of products being sold under that name.

Recommendations of the Commission, "with a view to preventing or remedying . . . conditions," include:

"A law providing for the reopening of anti-trust cases on the application of the Attorney

General by a bill of review for the purpose of securing such modifications of decrees as new conditions may require."

"Abolition by legislation, in certain cases, of common stock ownership in corporations which have been members of a combination dissolved under the Sherman law."

"Effective limitation upon common ownership of stock in potentially competitive corporations by withdrawing the power of voting and control."

"Legislation which, while recognizing common ownership, would fix upon such common owners the responsibility for the acts of each of the several companies so owned, which prevent competition."

"Segregation of the ownership of the pipe lines from the other branches of the petroleum industry."

Fixing, by Congressional legislation, of standards for "gasoline."

Federal collection and publication of accurate statistics and information regarding the industry.

In detail, the Commission urged that when it finds, as in the case of the gasoline industry, an anti-trust dissolution decree has not restored competitive conditions, Congress might amend the Trade Commission act so as to authorize and direct the Attorney General to reopen the case for review as to the efficacy of a dissolution decree. In such proceedings it is suggested that the Commission's findings should be admissible evidence and that the courts should have power to make new decrees to insure competition.

Factors in Standard Oil domination cited in the Commission's report were:

Division of gasoline marketing into eleven territorial divisions, at least nine of which are said to be dominated by various Standard Oil companies.

Stockholders of the several Standard companies are, to a great degree, the same individuals or interests, more than half of the stock of the various companies being in the same hands. Moreover, the report states that leading Standard officers often hold considerable amounts of stock in two or more companies.

Standard Oil refineries produced more than 60 per cent of gasoline produced in 1915, sold about 65 per cent of the total marketed, and held more than 70 per cent of gasoline stocks.

"Correspondence of the difference of prices (in 1915)," the Commission's report says, "with Standard marketing territories, itself



points to arbitrary price making. But the arbitrary character of the inequalities in price is conclusively demonstrated by the facts that as between most of the territories there were no such differences in demand and supply, . . . and the margin between cost and price was widely different in the different territories."

Wholesale prices rose between 75 and 85 per cent in 1915, according to the Commission's report, and retail prices also soared. Only a part of the advance was declared due to increased demand and scarcity, the demand increasing 38 per cent in 1915 and the production but 7 per cent less. Very large profits were earned, as shown by the books of the companies and by enhanced stock market value of oil securities.

## Personals

Charles S. Keith, of Kansas City, Mo., has been appointed a member of the Advisory Council of the Board of National Defense, with special reference to the lumber industry.

H. G. James, president of the Western Petroleum Refiners' Association, of Kansas City, Mo., was a Washington visitor last month.

Gen. L. C. Boyle, of Kansas City, Mo., was in Washington several days last month.

F. N. Flynn, general superintendent of the Chile Exploration Company, at Chuquicamata, Chile, has severed his connection with that company, and is expected to arrive in New York the latter part of April.

T. L. Lewis, of Charleston, W. Va., passed through Washington recently on his way to New York.

O. B. Hopkins and C. W. Cook, oil geologists connected with the United States Geological Survey, are investigating the formations in southern Georgia in the hope of finding structures favorable to the occurrence of oil and gas.

C. H. Wegeman and C. J. Hares, who have been connected with the petroleum division of the Geological Survey, have resigned and are engaged in private work in Wyoming.

Robert H. Wood, an oil geologist who has been connected with the Geological Survey for a number of years, has resigned to establish a consulting practice. He is now engaged in work in Kentucky.

V. L. Conaghan, chief oil and gas inspector of the Bureau of Mines, visited Washington last month to consult with Van. H. Manning, the director of the Bureau.

J. Morgan Clements, a well known authority on the iron bearing districts of Michigan and Minnesota, has been visiting Washington recently.

Dr. Charles L. Parsons, secretary of the American Chemical Society, attended a meeting of that organization in Kansas City last month.

R. V. L. Stratton, chief clerk of the Geological division of the United States Geological Survey, who is a member of the Naval Reserve, has been called to active service as an assistant paymaster with the rank of Junior Lieutenant.

F. G. Clapp, managing geologist of the Associated Geological Engineers, has gone to Arkansas. M. L. Fuller, the other managing geologist, is making new explorations in West Virginia. C. T. Griswold, geological engineer, is in southern Oklahoma. Ernest Marquardt, geological engineer, is in Wyoming. E. B. Hopkins, geologist, has returned from Mexico to Texas.

H. S. Mikesell, for many years connected with the Mining Department of the Chicago, Rock Island & Pacific Railway Company, has been elected Vice-President and Treasurer of the Mikesell Brothers Company of Chicago.

Mr. and Mrs. E. T. Bent, of Chicago, stopped in Washington en route to Chicago from New York, where Mr. Bent attended the Four States' Wage Conference. Mr. Bent is president of the Illinois Coal Operators' Association, and an honorary life member of the American Mining Congress. While in Washington he discussed affairs of the organization with Secretary Callbreath.

George H. Cushing, editor of the Black Diamond of Chicago, attended the Four States Wage Conference held in New York last month.

S. A. Shafer and Mrs. Shafer, of Assumption, Ill., spent several days in Washington recently. They attended the Wage Scale Conference in New York, and stopped in Washington en route to Chicago. Mr. Shafer is a prominent mining man of Illinois, a member of the Illinois Coal Operators' Association and has been of great assistance in the work of the American Mining Congress.

Francis S. Peabody, of Chicago, spent a few days in Washington in conference with Mr. B. M. Baruch, of the Council of National Defense.

H. J. Rahilly, a mining engineer, who has been in the service of the Bureau of Mines for several years, has resigned to accept a position with the Anaconda Copper Mining Company.

## BIG FIRST AID CLASS TRAINED BY DR. LYNOTT



*Photo by Harris & Ewing*

DR. W. A. LYNOTT

With the increasing interest which is being taken in general preparations for war, the Bureau of Mines is losing no opportunity to train its employes and others interested in first aid work. A class of eighty-five has been trained in first aid work in the Washington office of the Bureau of Mines by Dr. W. A. Lynott, mine surgeon of the Bureau. The wives and sisters of employes of the Bureau have joined this class and the members of the class have become very efficient as the result of the intensive training which they have taken.

Dr. Lynott has been engaged for three years in sanitary and first aid work for the Bureau. His work in the Missouri zinc district has been done so well that Webb City has appointed him her health commissioner at a much increased salary over that received by Dr. Lynott as mine surgeon.

Dr. Lynott is a native of Scranton, Pennsylvania. His education was obtained in the following institutions: St. Thomas college, St. Cecelia academy, Louisville Medical college, Medico-Chi college and at the University of Vienna. In addition he has had extensive hospital experience.

## COAL OPERATORS CALLED UPON FOR IMPORTANT DATA

As a portion of its work in gathering information necessary to the successful carrying out of the war program, the United States Geological Survey has called upon all operators of bituminous coal mines for the following information:

What is a reasonable estimate of the maximum daily capacity of this coal mine, if full quota of labor and railroad cars were available?

How many men inside and out (including coke workers and office force) are now employed?

What is the daily capacity of the mine with this number of men (assuming full car supply)?

What is the total number of men that could be used to advantage at this mine?

Is your labor union or nonunion?

What do you consider the outlook for labor supply in the next twelve months? To what extent may military or naval recruiting affect your supply of men?

In face of the certainty of a serious coal shortage this fall, the Geological Survey is making every effort to alleviate the situation wherever possible. It is realized that prompt action at this time can do much to improve the situation this fall. By knowing the maximum daily capacity of each mine it will be possible, in case the need should justify it, for the government to take steps to furnish certain mines with cars and the labor necessary to make available its maximum output. In such a contingency it would be necessary to know whether to fill out the labor supply at any particular mine with union or nonunion men.

In order that every economy in the use of rolling stock may be effected, the Survey is requesting mine operators to furnish definite information as to the general direction of coal shipments. Operators have been asked to state the proportion of their production which moves east, west, north and south. They are also asked to indicate the proportion of their coal which is for export, tidewater or lake destinations.

In this connection every effort is being made to call attention to the necessity of early purchases of coal. Consumers, large and small, are being asked to store the amount of coal they will need next winter at the earliest date possible.

### William J. Fenner Dies

The Herzler & Henninger Machine Works makes the following announcement: "With most profound sorrow we announce the death of our Vice-President, William J. Fenner, April 20, 1917, at his home in Belleville, Illinois. Mr. Fenner was a member of our firm since its organization."



## ALASKA A GREAT FLIER IN REAL ESTATE, LANE DECLARES

"Fifty years ago March 31," said Secretary Lane recently, "Alaska became a part of the United States.

"We are only beginning to realize how tremendous the service was that William H. Seward performed when he secured for us that great source of wealth. When Seward was Secretary of State few men realized the great potential value of Alaska. Popular impression held it a snow-bound wilderness, a land of ice and polar bears. Seward felt that the time would come when the wealth of Alaska would astound the world. His judgment today is vindicated.

"Opposition to the taking of Alaska was as blind as it was virulent. But after fifty years actual financial statements show us and prove conclusively that to have neglected that opportunity would have been a colossal blunder—a blunder future generations could never forgive.

"A moral obligation was one of the primary reasons that led to the purchase of Alaska. Russia had given us the passive support of two fleets of warships during our civil war, and saved us from serious indignities that threatened from abroad. Russia needed money. We, of course, could not give it to her outright, but we could let her have it and take in exchange her barren North American provinces. In the face of a storm of protest, the treaty was signed and fully ratified, the Russian ambassador collected \$7,200,000 from Uncle Sam, and Alaska edged her way into a protesting and inhospitable democracy.

"Six hundred thousand square miles of territory, 384,000,000 acres of land, were bought by our government in 1876 for a little over \$7,000,000. That little flier in real estate, at 2 cents an acre, has brought something more than three-quarters of a billion dollars into the channels of American trade during the past half century. And the profits are just beginning to come in. A scant 65,000 people are living in that vast country, one-fifth as large as the United States. One hundred million dollars out of that three-quarters of a billion formed their contribution for 1916. What it will be in 2016 no man can predict.

"The people who are going to Alaska in these days are men with families, people who are going to stay and put their children in Alaskan schools, warm them with Alaskan coal, feed them with Alaskan meat and vegetables, pay their bills with Alaskan gold. Normal industry is forcing the frontier. Alaskans have confidence in the legitimate resources of their great empire. They are convinced that Alaska's future will be an imposing one.

"Inaccuracy and distortion of facts caused the faulty impressions that existed in the past, but the handful of far-sighted patriots who have poured their millions into American banks and business, the men who have

lived the life and who know, are fast informing the world. Few in numbers, as were the frontiersmen who opened up the forests of New York and Ohio, but as determined in spirit and resolute in purpose as were those early explorers, the sturdy pioneers of Alaska have opened up new fields of enterprise, and are today compelling attention.

"Complaints are heard throughout the States that meat in Alaska is scarce and high in price. Let those who so complain take comfort in the thought that soon Alaskan reindeer meat will find its way to metropolitan tables, and when it does our staple beefs and muttons will find a competitor quite worthy of their steel.

"It is estimated that 150 000 000,000 tons of coal lie in the virgin coal fields of Alaska. This coal is gradually appearing in the market. Experts say some of the best coal in the world streaks the giant mountains of Alaska. With these mines opened, with the new government railroad in active operation, the development of great and rich tracts, both mineral and agricultural, will follow inevitably.

"The great gold fields of the interior never have been worked adequately. Extend the advantages of railroad transportation and mine operators will soon be able to increase their output materially. Gold worth \$16,000,000 is mined each year in Alaska under present conditions. The value of the precious metal taken from Alaskan mines since the early eighties has amounted to more than \$285,000,000. A paltry \$7,000,000 and a few odd thousands was grudged for the entire territory only fifty years ago.

"Copper mined last year brought between \$35,000,000 and \$40,000,000, and still comparatively little has been taken out. Broad fields remain untouched.

"When Russia sold Alaska in 1867 she threw in the surrounding seas for good measure. Since then great masses of fish caught in Alaskan waters have brought our people \$230,000,000. Each year sees the establishment of new centers and larger canneries. Fur-bearing animals, too, have increased our mighty dividend by \$65,000,000.

"Alaska's period of trial is over. She has been weighed in the balance and found magnificently worthy."

## NEW BUILDINGS PLANNED FOR EXPERIMENTAL MINE

A new group of buildings is to be erected by the Bureau of Mines at its experimental mine near Pittsburgh. Better structures will be provided for housing the machinery and apparatus necessary to the extensive experiments that are being carried on there. This will add much to the convenience and comfort of the men engaged in this work. The explosives laboratory is not to be moved to the mine. It will remain in its present quarters until it is housed in the new building being erected in Pittsburgh.

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MAY, 1917

## COCKRANE IN BULLETIN TELLS OF SAFETY FIRST TRAIN

In an effort further to acquaint the people with the work that the Federal Government is doing every day to protect its citizens against injury and death, and with the measures it takes to promote the health and comfort of the people, exhibits showing apparatus, devices, and methods used by the Government were assembled by the departments and bureaus at Washington in a special train which was sent to as many places throughout the United States as was possible under the circumstances, says John L. Cockrane, of the Bureau of Mines, in his bulletin telling of the Safety-First train.

The train, which consisted of 12 steel cars, carrying a quarter of a mile of exhibits, visited 87 cities and towns in 16 states, in regions between Philadelphia, Pa., and Denver, Colo. More than half a million visitors inspected this train, and upon the completion of its itinerary of four months requests had been received from hundreds of other cities. It was with considerable reluctance that the train had to be given up at the end of the four months, and it is the hope that some day a similar train will be owned, operated and equipped by the Government and will be sent into every part of the country, so that every citizen may be able to obtain a closer view and a more intimate knowledge of what the Government is doing for the people.

The train was furnished through the courtesy of Mr. Daniel Willard, president of the Baltimore and Ohio Railroad, and was retained by the Government as long as it could consistently accept the generous proposition of Mr. Willard. The Baltimore and Ohio Railroad not only furnished the train, but also provided transportation over its system.

Shortly after the train had started, there were inquiries from the presidents of various trunk-line railroad systems throughout the country requesting that the train be taken over their lines. After two months over the Baltimore and Ohio system, the train was loaned to the Missouri, Kansas and Texas system for one month for an itinerary through Missouri, Kansas and Oklahoma, this railroad agreeing to furnish transportation. At the close of this itinerary the Union Pacific system was given a similar opportunity to handle the train, and the people in Kansas, Colorado, Wyoming, Utah and Nebraska were thereby permitted to see the exhibits.

The train on September 1 was returned to the Baltimore and Ohio Railroad. Had it not been for the patriotic cooperation of the three railroads mentioned, and particularly the Baltimore and Ohio, it would have been impossible to exhibit this train, for there were no appropriations to take care of the immense expenditure necessary.

The train was an effort to give the public a much clearer idea of the humanitarian work being accomplished by the Government. Such an exposition had never before been witnessed by the people. Those who have been fortunate enough to be able to visit Washington and spend a few days in learning about the Government's activities have been privileged to see a number of those exhibits at various times, but never before has practically the entire "safety-first" work of the Government been assembled on a train. That the people were surprised at the extent of the Government's interest in their behalf was manifest every day the train was on its itinerary. It became a common expression that no one before had had any idea of the practical work the Federal Government was doing along these lines.

The Government issues millions of publications each year on the subjects depicted by the train, but these, unfortunately, do not lend themselves to such graphic presentation as the actual apparatus used in these endeavors. It is a safe assumption that many of the visitors left the train better American citizens and with a much clearer view of the helpfulness of the Federal Government to the people.

The plan of having a railway train take to the doorsteps of the people an exhibit of the work of the Government originated in the Department of the Interior. The detailed work of bringing the exhibits of the various departments and bureaus together was assigned to Mr. Van. H. Manning, director of the Bureau of Mines, who was designated as the executive officer in charge of the train. The Director of the Bureau of Mines was assisted by Mr. Morton F. Leopold, also of the Bureau of Mines, who had immediate charge of the train in the absence of Mr. Manning.

It is needless to state that all of those who aided in preparing the exhibit showed enthusiasm and hearty cooperation and that they did everything possible to make the train the big success it proved to be.



## **GILA RESERVATION NOT HEAVILY MINERALIZED**

After a thorough examination of the Gila Indian reservation, F. C. Schrader, a geologist in the service of the United States Geological Survey, is convinced that no exceptional mineral deposits are in evidence in that reservation. Reports have been reaching the Geological Survey that many heavily mineralized belts exist in the 700 square miles which are included in this reservation and that arrangements for leasing them should be made so that these minerals might be developed. While Mr. Schrader found several mineralized areas within the boundaries of the reservation, no one of them had any indication of special promise, he finds.

The Gila reservation is twenty miles south of Phoenix. A portion of it is very ruggedly mountainous and difficulties of transportation would have to be considered in any mining operation which would be attempted. There are no roads in the reservation and their construction would involve very heavy expenditures.

While in the West Mr. Schrader visited a number of Nevada camps and made examinations so as to be able to bring up to date the geological data already possessed by the Survey in regard to these areas. He visited the Wonder, Fairview, Rawhide, Eagleville and Rand mining districts. He found that the increased demand for their product had stopped the decline which has marked these districts during recent years. In fact, there is more mining activity in these camps than ever before has been the case. The tendency, however, is to extend the development in the proven mines, both laterally and in depth, rather than to open new mines, Mr. Schrader declares.

While on his western trip, Mr. Schrader also did some land classification work in Idaho.

## **ENGINEERS FOR NEW MINE RESCUE CARS SELECTED**

C. A. Allen, of Denver, and E. Steidle, of the bureau staff, have been appointed to take charge of two of the new mine rescue cars just turned over to the Bureau of Mines. It will be recalled that the appointment of C. A. Herbert, of Cameron, Mo., to have charge of the third new car, already has been announced. Mr. Allen will have charge of the car assigned to the Butte district. Mr. Steidle has been assigned to the car for the Reno district. Mr. Herbert is to have charge of the car which will have its headquarters at Raton, New Mexico.

Mr. Steidle already is well known in Bureau of Mines work. He has been connected with the bureau since 1912. In his work with the mine safety branch of the bureau he has traveled extensively and is known personally by a large number of mine operators. He re-

ceived his higher education at the State College of Pennsylvania.

Mr. Allen has been engaged in metal mining work in several of the western states and in Mexico. He is a graduate of the Colorado School of Mines and for a time following the completion of his course was a member of the faculty at that school. His salary as mining engineer for the bureau will be \$3,000.

Mr. Herbert's first experience was gained in Michigan, helping Charles Holmes, civil engineer, make surveys of the coal mines in and around Saginaw. He worked with him for two years, and then entered the Michigan College of Mines, at Houghton, Mich., graduating with the class of 1901.

After leaving college he went to Illinois as engineer for the Chicago, Wilmington and Vermillion Coal Company, and, with the exception of one year spent with the La Salle County Carbon Coal Company, of La Salle, Ill., as mining engineer, practically his entire mining experience was gained with this one company. After serving with it as mining engineer for four years, he was made superintendent of its two mines at Streator. Later he was promoted to the position of general superintendent, which position he held for seven years.

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## **Geo. W. Schluederberg Dies**

George W. Schluederberg, general manager of the mines of the Pittsburgh Coal Company, died at his home in Pittsburgh, April 6. He was 74 years old.

Mr. Schluederberg was chairman of the American Mining Congress Committee on Arbitration, Mediation and Conciliation. He took an active interest in the work of the organization, and was interested particularly in all industrial questions.

He was born in Philadelphia, but since 2 years of age had resided in Pittsburgh, where he was an important factor in Pittsburgh's industrial field. In 1867 he had started work with the National Coal Company. He was later employed with the Oak Ridge Coal Company, and in 1900, when the Pittsburgh Coal Company was organized, he became its general manager.

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## **DEMAND FOR COAL IN NORTHWEST UNPRECEDENTED**

Every effort is being made to push as rapidly as possible the coal investigation being conducted by the Bureau of Mines in the Northwest. The high price of fuel oil and the present industrial activity have led to an unprecedented demand for coal. The Bureau of Mines, through its Seattle station, expects to be of decided aid in meeting this situation.

**GOVERNMENT EXPERTS WELL  
KNOWN TO MINING MEN**

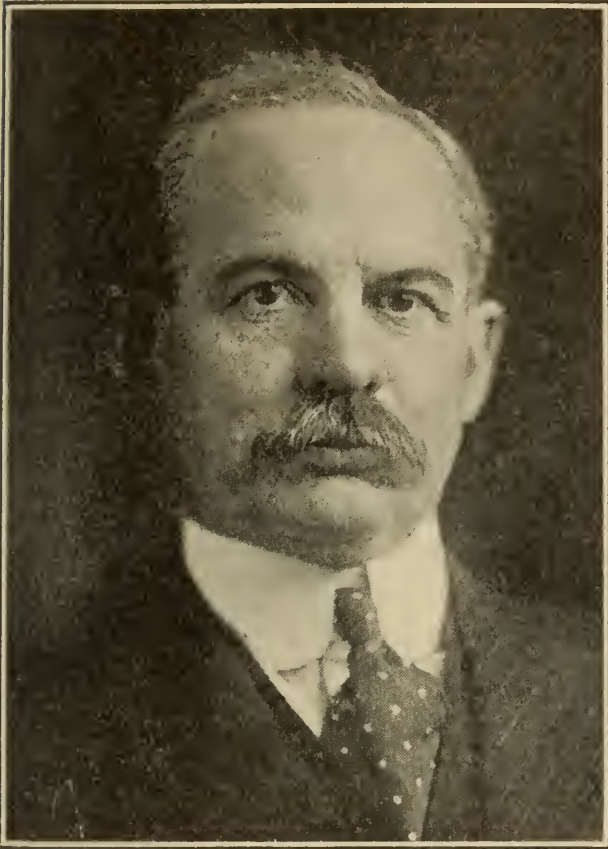


*Photo by Harris & Ewing*

**R. H. SARGENT**

R. H. Sargent, who has been connected with the United States Geological Survey for a number of years, is en route to China, where he has accepted a place as instructor in the government military institute.

Mr. Sargent was born in Sedgwick, Me., December 4, 1875. His early education was obtained in the schools at the place of his birth. He attended Bucksport Seminary, at Bucksport, Me., in 1891 and 1892. The following two years were spent at Mount Hermon School, at Mount Hermon, Mass. His geological training was obtained at George Washington University.

Mr. Sargent began work with the Geological Survey in 1898. He remained in the Rocky Mountain division until 1906. During that time he did a great deal of work in mining areas, and is well known to many mining men in that section of the country. In 1906 he was transferred to the Alaskan division of the Survey, and each season since that time has been detailed to field work in the northern territory. Since 1908 he has had supervision of the office work on Alaskan topographic maps.

As a member of the party of the Carnegie Institution which went to China in 1903, Mr. Sargent was able to lend valuable assistance in starting the topographical mapping of China.

(COPY.)

**STATEMENT OF THE OWNERSHIP,  
MANAGEMENT, CIRCULATION, ETC.,  
REQUIRED BY THE ACT OF CON-  
GRESS OF AUGUST 24, 1912:**

Of THE MINING CONGRESS JOURNAL, published monthly, at Washington, D. C. for April 1, 1917.

City of Washington } ss:  
District of Columbia }

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared J. F. Callbreath, who, having been duly sworn according to law, deposes and says that he is the editor of THE MINING CONGRESS JOURNAL, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of Publisher—The American Mining Congress.

Postoffice address—Washington, D. C.

Officers:

Walter Douglas, President, 99 John street, New York.

Charles M. Moderwell, First Vice-President, McCormick Building, Chicago.

George H. Crosby, Second Vice-President, Duluth, Minn.

L. A. Friedman, Third Vice-President, Lovelocks, Nev.

J. F. Callbreath, Secretary.

Editor—J. F. Callbreath.

News Editor—Paul Wooton.

Business Manager—E. Russell Coombes.

2. That the owners are (give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock): The American Mining Congress—a corporation, not for profit. No stockholders.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are (if there are none, so state): None.

J. F. CALLBREATH,  
(Signature of Editor.)

Sworn to and subscribed before me this 31st day of March, 1917.

(Seal.)

J. C. HAMMACK.

(My commission expires January 10, 1921.)



# ARIZONA CHAPTER OF MINING CONGRESS SHOWS LONG LIST OF ACHIEVEMENTS

By Cooperating Closely with Representatives of Labor Harmonious Consideration  
of Welfare Measures are in Progress—Chapter Influential in  
Defeat of Anti-Alien Bill

An example to other mining states is pointed by Arizona in securing remarkable results from the activities of its state chapter of the American Mining Congress. That mining men throughout the entire country may have a more definite idea of what may be accomplished by a state chapter of the American Mining Congress a report just issued by the secretary of the Arizona chapter is reproduced herewith as follows:

## EFFORTS FOR CLEAN LEGISLATION

The present executives of this Chapter entered upon their duties about the time of the assembling of the State Legislature in regular session. It was conceived that no more important work presented itself than such effort as might be exercised along legitimate argumentative lines to the end of assisting the curtailment of new and superfluous legislation, and in endeavoring to convincingly disseminate the Chapter's views among legislators as to proposed measures which were considered to contain elements that would retard the general prosperity. The very large measure of the tax burden being carried by the mining industry in Arizona, and the great bulk of the employment in the state being provided directly and indirectly by the mining companies, it will readily be seen that such efforts as were directed had the result of largest benefit to the mining districts. The conduct of this work was calculated with the utmost possible endeavor at fairness, and that it was so recognized and the endeavor appreciated is best illustrated by the fact that there was assistance afforded cooperatively by both the mining operators of the state and many of the local union organizations of the union employes, and in instances of issues of state-wide concern, by the State Federation of Labor.

There was very excellent reason at the end of the legislative session for the belief that very much had been accomplished by way of bringing about better understanding between the employers and their employes, and for the belief that in future this understanding will broaden, through continued effort to bring about fair performances and increasing inclination toward cooperation on a just basis, to the end of accumulating benefits for both sides, and consequently for all of the public.

In this connection it may be cited that representatives of organized labor took the initiative in bringing about steps looking to the framing of a workman's compensation measure to be submitted to the voters of the state at the next general election, two years hence, and that they brought their proposals to the attention of the industrial operators of the state in a spirit of such evident frankness and well meaning that cooperation resulted. In consequence, representatives of the State Federation of Labor and the Railroad Brotherhoods are working earnestly and in harmony with representatives of the mine operators and other industrial interests in the state to the end of arriving at agreements upon a fair measure which will afford the maximum of real protection to both employer and employe, and that will go far toward stopping the much-to-be-deprecated graft which a certain class of attorneys fatten upon through impositions practiced at the expense of the working man. It is considered on all sides that the direct contact and affiliation in a common cause thus brought about between employer and employe in the state gives cause for the belief that a very considerable advance has been made in better understanding, and that the results along this line will continue to expand, to the very great benefit of the people of the state at large.

## OTHER ENDEAVORS

In the defeat of the Kinney bill, which would have deprived foreigners of the right to work in Arizona, and which was resurrected from a previous legislature, the Chapter found labor organizations at its elbow with assistance, because of the general unfairness of the measure. Presentation by the Chapter of the fallacies in arguments advanced by some few extremists in favor of adoption of an anti-single man drill law was successful in preventing the infliction of this trouble engendering character of legislation upon the State. Miners among the members of the legislature and not a few union men were ready enough to see that the introduction of the single-man drill to general usage in mine workings in Arizona, where it could be employed to advantage had not decreased employment or increased personal risk in the mines, but, on the other hand, through facilitating the mak-

ing of openings in ore and in other ways assisting the operators, had greatly increased the employment and the general mining activities of the state.

A measure having the purpose of curtailing the powers of sheriffs to control peace conditions, through depriving them of the right to employ emergency deputies, was successfully argued against, with the result of continuing emergency security for the homes, the general public and the industrial interests of the state.

A school tax measure, from which the sparsely settled agricultural districts would have benefited at immense cost to the thickly populated mining districts, the producers of the bulk of the taxation, was supplanted with legislation of fair character, from which both the mining and the agricultural districts will receive increased advantages, but without unjust imposition upon either. A number of other measures indirectly placing hardship upon the mining districts to the unfair advantage of other centers were likewise displayed in their real colors, with the result that the majority of the legislators stood for fairness and either disapproved the bills in toto or so amended them as to remove their unfairness.

In conclusion as to legislative matters, it seems permissible to say that the work in which the Chapter pointed the way and that in which it assisted carried very much benefit, both as to the present and looking to the future. It may be said that more was achieved in putting down a firm foundation for rational legislation and the ending of haphazard law-making than brought about by the performances of any previous legislative body since Arizona entered statehood.

The exceedingly few new laws placed upon the statutes by the legislature, it may be added, recommended the body very highly to the Arizona public. The legislators set, through the display of conservatism and thoughtful consideration of business that came up, an example that future Arizona legislatures will doubtless make endeavor to follow.

All of this is encouraging in the highest degree to those engaged in the state's largest industry, involving its greatest employment of labor, its largest tax resource and its greatest investment of capital, the latter, in a big measure, represented by the share investments of miners of Arizona and of other states in which mining is an important factor, notably Michigan, where it is a well-known fact that many miners on the retired list by reason of age disabilities are living and keeping their families in comfort and assisting with the development of their home communities through the dividends received from their shares in Arizona producing copper mines.

#### IN PUBLICITY CHANNELS

The Chapter has not been idle in matters of larger publicity for the mining districts of

Arizona, to the end of advancement of the interests of all legitimate, conservative enterprises, and also to the end of better understanding in every part of the state of the very great importance to the public welfare that successful mining operations represent.

There has also been endeavor through the press to bring about better understanding between employers and employes in the mining industry, supplementing the policy of fairness and frankness carried out with respect to legislative matters.

The press has been very liberal in its extension of cooperation and aid in all ways along these lines, as a whole recognizing the benefits which will be carried to all the people and interests in the state by successful issue of the endeavors which have been undertaken and gladly joining hands with the Chapter in the movement.

It has been felt in connection with publicity matters that the home field should first be considered, and that with legitimate, well-considered cooperation established here the time would have arrived to extend the publicity work to the broader field represented in various mining publications of good standing in the country at large. The preliminary steps have been taken to an understanding association with these, based, as is the home understanding, upon the confidence that space given will not be abused in any manner through the tendering of prejudiced or thoughtlessly constructed news or other matter, but will have truth, fairness and the best interests of the public always in consideration. In a very short while the Chapter expects to be able to furnish all of the leading publications of the country with weekly and monthly résumés of the worthwhile mining news of the state, this news service being based upon actual knowledge of the real conditions extant in the various districts, reflecting the matured opinions in these and furnished without prejudice in any respect. It is felt that such service will be appreciated by publishers featuring mining matter and by their leaders, while at the same time increasing interest in and appreciation of the industry both in and out of the state.

A more delicate matter in association with the publicity work in the state has been the gaining of an understanding on the part of newspaper men that the mine manager is not an aloof person, but simply a very busy one; that, notwithstanding his multitudinous duties, with their endless detail, he really desires the cooperation of the press in keeping the public aware of the fairness which he wishes to maintain, and that he is readily accessible to the newspaper man who comes legitimately in the interests of accuracy and understanding of the aims and work of the company. A beginning has been made in closing somewhat of a breach which had grown up out of misunderstanding by publishers, more or less generally, of the attitude



of the operators, the efforts of the Chapter in this direction having been met with the utmost of cordiality on both sides to this time. Among other results, there have been increased news channels opened to the newspapers and there has been turned to their printing offices in such of the districts in which this phase of the work has reached, much printing which formerly was thoughtlessly given to outside of the state concerns, mainly exclusive job printing plants with no interest in Arizona and no power to extend aid through publicity to the state's chief interest, a work that the Arizona newspapers are constantly engaged in, with no commensurate reward possible of attending.

#### PRODUCERS AND THE PUBLIC

The Chapter has also initiated a line of endeavor to the end of bringing the operators and the public into closer understanding of the needs of each other in the several districts. This has resulted very happily, so far as carried out, and there is much ground for hope that as time passes the attainments will highly justify the efforts put forth. Some important gains have been made in securing the provision of desirable public conveniences, and these have suggested others which are by way of being carried out. Mine operators have been found eager to act upon suggestions presented them from the viewpoint of the public and which have not previously reached their consideration, solely by reason of the pressure of their operating duties.

#### PATRIOTIC PREPAREDNESS

You are aware through previous correspondence of the endeavors of this Chapter on behalf of operators and operatives of the state to secure the interest of the Federal Government in such preparedness steps as will prevent any check upon their efforts to see that the Government and its allies are in no way embarrassed by any curtailment of copper metal supplies through the intriguing of the representatives of foreign powers, and of the high influence which it was sought to bring to bear to this end.

In furtherance of the spirit of patriotism in the state, so desirable and necessary, in view of the dependence which must be placed upon it for the production of more than one-third of the total output of copper this year, the Chapter assisted in bringing about patriotic song services, patriotic addresses in the schools, and large patriotic demonstrations by all of the people in the several mining districts during the first and second weeks of this month, the attendant results being excellent.

#### FUTURE WORK

There might be added the detail of other work accomplished by the Chapter to this time of lesser importance, but rather than run to further length I will conclude this report with the statement that among the more

important things now under consideration for future effort, in addition to those matters which have been mentioned, is the extension of the study of political economy under competent direction in the public schools, together with an increase in the number of reference books upon the subject in the school libraries.

There is also effort in contemplation in the direction of making the scenic railroad routes leading to the several copper producing districts of the state better known to Americans who are out to see America. Some of these routes afford attractions unsurpassed on the continent, while the country through which they make their way abounds with legendary and historic interest of the greatest, and their copper camp terminals with industrial activity to an extent that the large majority of Americans do not dream to be extant elsewhere than in the great manufacturing centers of the East. It is felt that the more Americans brought in contact with these things, the larger and more rational and successful will be the investment of money in American mining.

Reverting to the extension of the study of political economy, I may say that I do not believe effort can be extended more laudably in any direction. Experience in the Bisbee district is that with the study confined to but half of the last period of the high school a great many errors are corrected in the minds of the young people as to the relations of capital to labor. These corrections do not stop with the students in their benefits, but are carried into the homes, with results of the best, and that might be attained in no other way. I am hoping means will be found in cooperation with the superintendents of the schools in the state and in the several mining districts in particular to introduce this study in the last year of the grammar grade, at least, and to carry it through all of the periods in the high schools. It is hoped that the cooperation of the State University may be obtained to the extent of detail of a successful teacher of the study during a part of each year in an advisory capacity to teachers in the schools of the state.

#### EXTENSION OF USAGE OF COPPER

The Chapter has succeeded in directing more attention to copper and its products in point of their higher efficiency and general larger desirability in all lines of building construction; for cornice work, hinges, door knobs, chandeliers, etc.; for ornaments about the home, replacing cut-glass and other materials; to the advantages of copper alloy in wire rope which may not be subjected to capacity strain, in wire of ornamental and all light usage sort, including the great quantity used in carrying vines, in chicken yard fencing and other domestic lines, the advantages of the small alloy being in the prevention of rust, the great consumer of steel and iron, and

in interior building construction in the far longer life, intact in beauty, of brass articles, this greater life making up many times over for the slightly increased original cost of the copper and brass products in comparison with similar articles of iron, steel and other materials. This movement, started in Arizona, it is hoped to extend widely. The support which has come to it here is gratifying, and it seems reasonable to expect that the planned extension of the campaign will add largely to the domestic consumption of copper in the United States. It is considered a movement that ultimately will have a great deal of influence in stabilizing the copper metal market and in making up for decrease in demand which will follow the end of war usages and the re-establishment later of European industries on efficiency basis.

#### OTHER METALS

While copper naturally absorbs the great volume of interest in Arizona at this time, the Chapter is awake to the fact that there are other important metal mining activities in the state, and is preparing to give intelligent and full consideration to these. Particularly is it aware of the possibilities attending the likelihood of much wider interest in the silver lead areas of the state, and in which it is reasonable to expect that the awakening now under way will culminate in much new interest and investment. The Chapter is also keeping in touch with possibilities for the extension of development of other Arizona metals and for the development of oil. In the latter connection it has superficially investigated the most likely area now under development in the state, in Yavapai county, where there is the possibility this time of the attainment of commercial wells.

#### MEMBERSHIP

As you will gather, the time of the Chapter has thus far been pretty much occupied with its affairs of emergency and organization character. The stage is now nearing hand, however, in which endeavor will be made to extend its membership. The foundation for this work has been partly put down through publicity arrangements to the present time, and it is believed that under the program that has been outlined it will be possible to secure the active and highly interested association of a number of new and desirable members whose districts are to receive real news service and will thereby gain direct benefit. There is also in mind the encouragement of the organization of mine managers and superintendent clubs in the several mining districts, these to have no direct association or affiliation with the Chapter, but naturally looking to it as an organization which should have the benefit of their support and cooperation. The functions of the mine managers and superintendent clubs, as the Chapter views the matter, should be confined to social affairs and to the jealous guarding of

their membership from invasion by wild-cat promoters and other undesirables who find their way into the industry, to its detriment and that of the investing public. It is believed that such clubs as suggested would be dominated by men having the best interests of the industry and of the public much at heart, and that their refusal of membership to persons not in good standing by reason of previous promotion records would have a very great influence in checking vicious practices and in eliminating those from the State who may be given to crooked methods. Cooperation with the State Corporation Commission by the several clubs would doubtless be an outgrowth of their activities, and would further add to the general benefits and to the protection of the public.

#### CLASSIFICATION OF ORES

##### CHANGED BY WESTERN ROADS

Changes in the western freight classification having an important bearing on ore shipments have been authorized by the Interstate Commerce Commission. The order is as follows:

It is ordered, That the petitioners herein be, and they are hereby, authorized to establish upon not less than 30 days' notice to this Commission and to the general public by filing and posting in the manner prescribed in section 6 of the act to regulate commerce, the following classifications, to wit:

| Ores:                                                                          | Class |
|--------------------------------------------------------------------------------|-------|
| Ores, not otherwise indexed by name, subject to Rule 2:                        |       |
| Actual value not exceeding 5 cents per pound:                                  |       |
| In bags, barrels or boxes, L.C.L.....                                          | 4     |
| In packages or in bulk, C.L., min. wt. 50,000 lbs. ....                        | C     |
| Actual value exceeding 5 cents per pound but not exceeding 40 cents per pound: |       |
| In bags, barrels or boxes, L.C.L.....                                          | 2     |
| In packages or in bulk, C.L., min. wt. 50,000 lbs. ....                        | A     |
| Actual value exceeding 40 cents per pound but not exceeding \$1.00 per pound:  |       |
| In bags, barrels or boxes, L.C.L. ....                                         | 1     |
| In packages or in bulk, C.L., min. wt. 50,000 lbs. ....                        | 4     |
| Actual value exceeding \$1.00 per pound:                                       |       |
| In bags, barrels or boxes, L.C.L.....                                          | D1    |
| In packages or in bulk, C.L., min. wt. 50,000 lbs.....                         | 3     |
| Value not stated, not taken.                                                   |       |

#### Walter Fitch Honored

Walter Fitch, an active member of the American Mining Congress, president of the Chief Consolidated Mining Company, and other properties, has been appointed a member of the board of regents of the University of Utah by Governor Bamberger.



### WAR DELAYS DEDICATION PLANS AT PITTSBURGH

Due to the entrance of the United States into the war and the increased work that has been thrown upon the Bureau of Mines thereby, it has been decided to postpone indefinitely the dedication of the Bureau of Mines' new building at Pittsburgh. This will also cancel the special meetings of the national technical societies which were to have been held at Pittsburgh during that time. The building will be occupied as early as possible, but the dedication ceremony will be deferred until after the war.

### OREGON BUREAU OF MINES GIVEN MORE FUNDS FOR NEXT YEAR

The Oregon legislature made available \$30,000 for the use of the Oregon Bureau of Mines and Geology for the ensuing biennium 1917-1918. The appropriation for the past biennium was \$35,000, but specified that \$10,000 had to be spent at the Panama-Pacific exhibit for a mineral exhibit, thus leaving but \$25,000 for the investigational work of this Bureau. The Bureau, therefore, has \$5,000 more available this coming biennium.

At a recent meeting of the commission H. N. Lawrie, of Portland, was elected chairman, which makes the third successive biennium for him to assume the responsibility of this service and accept the honor which is conferred. At this meeting the plans for investigation of the mineral resources of the State were left in most elastic form, to be dealt with as the occasion arises. Of these plans the commission contemplates a very active cooperation with the United States Bureau of Mines in working out the milling and metallurgical problems of the State.

A law was passed removing restrictions to smelter locations in the State of Oregon, thereby making it more desirable to consider the operation of smelters in the State.

A bill was passed creating a Lime Board with an appropriation of \$20,000 to investigate and engage in the pulverized lime business. This bill was passed presumably in the interest of the farmer.

### California Oil Report Out

The first annual report of the State Oil and Gas Supervisor of California is being distributed. It covers the operations of the department of petroleum and gas of the State Mining Bureau. Fletcher Hamilton is the State mineralogist, under whose direction the bulletin was written. R. P. McLaughlin, State oil and gas supervisor, is the author of the report. The report contains a number of illustrations, charts and statistical tables. It will be found of interest to the petroleum industry throughout the country, although its greatest interest, of course, will be to operators in California.

### NEW COAL MAP COMES IN HANDY AT THIS TIME

Due to the existing emergency, proofs of the incomplete coal map being prepared by the Geological Survey have been hurried to the War Department. This map, which is being made under the direction of M. R. Campbell, is by far the most pretentious mapping of the country's coal regions ever attempted. The work is so far advanced that practically the full benefits of it can be obtained from the proofs.

### Name of Company Changed.

The Southern Illinois Machine and Foundry Company, of Murphysboro, Ill., has issued the following announcement:

"We take pleasure in announcing that the corporate name of this company has been changed to 'Egyptian Iron Works.'

"Our old name, constituting one that was more or less awkward in addressing letters, orders, checks, etc., we, after due consideration, decided that a change would be to the interest of all concerned. The personnel of officers and management of the business will remain the same.

"On account of the large increase in business, we have outgrown our present quarters, and find it is going to be necessary to seek a new location. We are contemplating the erection of a new foundry building and car shop for the manufacture of complete mining cars of all descriptions, as well as other mining equipment."

### Sebastian Joins Bickett Company

C. A. Bickett, president of the Bickett Coal and Coke Company, of Chicago, makes the following announcement:

"I am pleased to announce that Don B. Sebastian, formerly fuel agent of the Chicago, Rock Island and Pacific Railway Company, has associated himself with this company, and at our next annual meeting he is to be elected a vice-president of the company."

### Offers Thoroughbreds to U. S.

George Wingfield, of Reno, Nevada, has offered to the President of the United States his entire stock of thoroughbred horses in case they are needed. Mr. Wingfield has about six hundred thoroughbreds. He formerly was a director of the American Mining Congress, and is a life member of the organization.

### Transferred to Seattle Station

Harlan A. Depew, a physical chemist, who has been working in the Pittsburgh station of the Bureau of Mines, has been transferred to the Seattle station.

**GOVERNMENT EXPERTS WELL  
KNOWN TO MINING MEN**



**WILL H. COGHILL**  
Metallurgist

Will H. Coghill, who recently was appointed a consulting metallurgist with the Bureau of Mines and who will be attached to the Corvallis station of that bureau, received his higher education at Shurtleff College and the Colorado School of Mines. He was graduated from the latter institution in 1903 with the degree of E.M. He had postgraduate work at the Chicago University, Northwestern University and at the University of California.

The first metallurgical work done by Mr. Coghill was under H. Foster Bain. Among the positions held by Mr. Coghill are the following:

Assistant Engineer, Calumet and Arizona Mining Co.; instructor, Michigan College of Mines; assistant engineer, Tamarack Mining Co.; chief engineer, Franklin Mining Co.; chief engineer, United Zinc Companies, superintendent, Highland Mine (Joplin); member of the faculty of Northwestern University 1907-1914; operated ore testing laboratory in El Paso 1914-1915; became member of the faculty of the Oregon School of Mines in 1915.

In 1916 Mr. Coghill was elected professor of metallurgy and placed in charge of the department of chemical engineering for the Oregon School of Mines.

As a result of a civil service examination he was appointed consulting metallurgist of the Bureau of Mines and recently was put in charge of the cooperative work of the Federal Bureau of the Oregon Bureau of Mines and Geology. Mr. Coghill is the author of numerous articles dealing with cyaniding and flotation.

**HIGHER COAL PRICES COME  
AS A SURPRISE TO SOME**

Many consumers of coal are just awakening to the fact that prices have advanced and that they will not be able to make as favorable contracts this summer as they were a year ago. Strange as it may seem, many consumers of considerable quantities of coal apparently were not aware that conditions affecting coal prices have changed materially since last summer. The Geological Survey is in receipt of numerous letters from coal consumers asking whether this is a legitimate increase of price or whether it is the result of some improper action on the part of coal operators. Such inquiries are being answered as follows:

"Since October and November of 1916 the demand for bituminous coal has been greater than the producer (because of labor shortage) and the railroads (because of lack of cars and motive power and generally congested conditions of their transportation systems) have been able to deliver. The price accordingly has risen to levels not previously recorded for any like period of time in the history of this country. Whether prices will recede depends, of course, upon this balance between supply and demand. Competent observers are of the opinion that the experience of coal consumers in the past six months will lead them to store coal during the summer months in larger quantities than heretofore, but that the scarcity of labor available for mining coal and the inability of the railroads to move the coal to destination at a rate much greater than at present, will prevent material relief. For this reason it is expected that the demand for coal next fall will be sufficiently strong to maintain prices somewhere near their present level. Published reports of contracts recently closed for bituminous coal indicate that many large consuming interests will pay from 50 to 100 per cent more for their fuel during the coming year than in 1916. There is ample evidence in the history of the industry to show that prices will not resume the former low level prevailing in 1914 and 1915."



**GOVERNMENT EXPERTS WELL  
KNOWN TO MINING MEN**



*Photo by Harris & Ewing*

**R. R. GOODRICH**  
Metallurgist

Robert R. Goodrich, who recently was appointed a consulting metallurgist of the Bureau of Mines, with station at Moscow, Idaho, has been extremely active in the practice of his profession. Some biographical data concerning him is as follows:

April, 1864—Born, Hartford, Conn.

June, 1885—Graduated B. S. in mining engineering, Massachusetts Institute of Technology.

1885-1890—Mining engineer for principal collieries in the New River coal fields on the Chesapeake and Ohio Railway; 1886, member American Institute of Mining Engineers.

1890-1893—Mining engineer for most of the new collieries on Elkhorn Creek, in the Pocahontas coal field on Norfolk and Western Railway; also (1893) manager of Elk Ridge Colliery.

1893-1895—Surveyed and put in irrigation plants for improvement of property, El Paso.

1895-1896—Assayer and chemist for Chihuahua Mining Company, Chihuahua, Mexico; traveled through Mexico and Northwest, visiting mines and smelters.

1896-1898—Mining engineer and assistant superintendent Helena Mining Company, mines of Chihuahua Mining Company; 1898, superintendent of the company.

1899-1902—Student "M. I. T."; 1901, graduated B. S. in mechanical engineering; 1902, degree M. S., majoring in electrical engineering.

1902-1904—"Engineering apprentice," Westinghouse Electric Manufacturing Company, East Pittsburgh, Pa.; 1903, member American Society of Mechanical Engineers.

1905-1906—Boston and Montana Consolidated Copper and Silver Mining Company, Great Falls, Mont.; smelterman; draughtsman; studied concentration.

1907—Visited and studied important mining sections, principally Coeur d'Alene, Idaho, and Butte, Mont., districts; superintendent Columbus Borax Company mine, Lebec, Kern County, Cal.; installed roaster.

1907-1914—Professor of metallurgy, charge of Bureau of Mines and Assaying, University of Arizona; studied Arizona copper fields; limited research work for Arizona mining companies; visited important mining sections of United States.

1913-1914—Sabbatical year at Columbia University; 1914, member American Electrochemical Society.

1914-1915—Paper, "The Hydro-Electrolytic Treatment of Copper Ores," Transactions of the American Electrochemical Society. Vol. xxv, 1914, p.p. 207-242; Ph.D. in metallurgy, Columbia University, June, 1915.

1915—Metallurgist, University of Idaho, Moscow, Idaho; United States patent No. 1171782, February 15, 1916, methods for the hydro-electrolytic treatment of ores; paper, "The Hydro-Electrolytic Treatment of Copper Ores," Transactions of the American Institute of Mining Engineers, Vol. lii, 1915, pp. 783-826.

### **Move to New York**

The Associated Geological Engineers, F. G. Clapp, manager, have announced that they are to abolish their Pittsburgh office, and will be represented in New York entirely in the future, at 120 Broadway.

### **Kentucky Institute to Meet**

The spring meeting of the Kentucky Mining Institute will be held at Lexington, Ky., May 18-19. An interesting program has been prepared and the meeting is expected to be a very successful one.

### **Arrange Closer Cooperation**

Carl H. Beal, a petroleum technologist in the service of the Bureau of Mines, has returned to Washington after arranging with the governor of Oklahoma and the State Corporation Commission for closer cooperation between the state and federal governments as to oil work on Indian lands.

## CURRENT FEDERAL LEGISLATION

Up to April 24, 1917, there have been introduced in the special (Sixty-fifth) session of the United States Congress 5,849 bills and 103 resolutions. Of these 2,078 bills were introduced in the Senate, and 42 Senate joint resolutions. In the House 3,771 bills have been introduced and 66 joint resolutions. The following bills will be of interest to the mining fraternity:

H. R. 22, by Mr. Mondell, provides for the reorganization of the General Land Office, and makes special provision for a Land Law Board, to be composed of the Assistant Commissioner of the General Land Office and four other persons having a thorough knowledge of the public land laws, to be appointed by the President, by and with the consent of the Senate, and charged with the consideration, review and decision of such cases as shall be assigned by the Commissioner of the General Land Office, its decisions to have the same force and effect as the decision of the Commissioner.

H. R. 52, by Mr. Mondell, provides for a mining experiment station at Lander, Wyo., and appropriates \$25,000 for establishing, equipping, and maintaining said station during its first year.

H. R. 53, by Mr. Mondell, provides for appeals from decisions of the Secretary of the Interior to the district courts of the United States of questions involving title to public lands; provides that the decision of questions of law alone by such courts shall be final, subject, however, to the right of the United States Supreme Court to review such decisions by certiorari or otherwise.

H. R. 54, by Mr. Mondell, provides that all lands included in power-site withdrawals shall be subject to disposal under the public land laws, with the express provision that all entries or patents shall be taken subject to the right of the State in which such lands are located to supervise and control the generation, transmission and sale of hydro-electric power, and that the denial of such authority to the State shall work a forfeiture of all claim or title to such land.

H. R. 56, by Mr. Mondell, grants rights of way through the public lands and national forests to all persons who shall file with the Secretary of the Interior satisfactory proof of right to the use of water in any State or Territory for any beneficial use, including the development of power, with the further proviso that all such rights of way and uses are granted upon the condition and subject to the reservation that all electric power generated thereunder shall be subject to the regulation and control of the State within which the same is situated, and that whenever such right to the use of water shall cease the right of way so granted shall immediately revert to the United States.

H. R. 58, by Mr. Mondell, provides that 25 per cent of the proceeds of the sale of public lands within any State shall be applied to the construction and improvement of public roads within such State.

H. R. 63, by Mr. Mondell, provides that the Secretary of the Treasury shall pay to the State of Wyoming one-half the rent and royalties collected by the United States from the Owl Creek Coal Company for its lease of coal lands from the United States.

H. R. 66, by Mr. Van Dyke, provides for the establishment of a woman's division in the Department of Labor to investigate and report upon matters pertaining to the welfare of wage-earning women and the competitive influence of women in the several industries.

H. R. 149, by Mr. Wason, provides for a tariff duty of 50 per cent ad valorem upon finished building stone and 10 per cent per cubic foot upon unfinished stone imported in this country from all countries except the Philippine Islands and the islands of Guam and Tutuila.

H. R. 195, by Mr. Carter of Oklahoma, provides for the sale of coal and asphalt deposits, leased and unleased, of the Choctaw and Chickasaw Nations in Oklahoma, after appraisal by a board consisting of three members to be appointed by the President—one upon the recommendation of the Secretary of the Interior, one upon the recommendation of the principal chief of the Choctaw Nation, and one upon the recommendation of the governor of the Chickasaw Nation. Twenty per cent of the purchase price is to be paid in cash and the remainder in four equal annual installments, bearing interest at 5 per cent. All sales shall be made subject to the rights of lessee, and the Secretary of the Interior is authorized to reject any and all bids. Lessee shall be entitled to a credit of any advance royalties already paid upon land in case of purchase, and any third party purchasing shall not be entitled to the royalty until the credit so given shall be exhausted at the rate of 8 cents per ton mine run and all royalties thereafter are fixed at 8 cents per ton mine run of coal. Fifty thousand dollars is appropriated for the expenses of carrying out the provisions of this act, and the proceeds derived from sales are to be paid into the Treasury of the United States to the credit of the Choctaws and Chickasaws.

H. R. 244, by Mr. Raker, creates a bureau for the deaf and dumb in the Department of Labor, charged with the duty of studying the industrial, social and educational conditions of the deaf and dumb throughout the United States, and of gathering statistics and information which may be useful in promoting the interests of said people.



H. R. 268, by Mr. Hayden, provides for the leasing of metalliferous mineral lands within Indian reservations for terms of thirty years and for the payment of a royalty of not less than 5 per cent of the gross value of the minerals at the mine, ground rental of 25 cents per acre the first year, 50 cents the second, third, fourth and fifth years, and \$1 per acre for each year thereafter, same to be credited upon the royalties which may accrue during the year of such payment. Locations are to be made under the provisions of the general mining laws of the United States, and the lessee is required to do at least \$100 worth of assessment work upon each claim during each year.

H. R. 274, by Mr. Hayden, provides that the requirement of \$100 annual assessment work upon mining claims shall not be required from those mustered into the militia or National Guard until six months after such owner is mustered out of service, and provided that locator shall file a certificate in the office where such location notice or certificate is recorded of his desire to hold said mining claim under this act.

H. R. 292, by Mr. Foster, provides for uniform selection and purchase of fuel to be used by the United States upon recommendation of the director of the Bureau of Mines.

H. R. 293, by Mr. Foster, authorizes the Secretary of the Interior to collect and publish statistics on the production, manufacture and marketing of crude petroleum.

H. R. 1693, by Mr. Taylor of Colorado, provides for the appointment by the President of a commission of five members to codify and suggest amendments to the general mining laws. This commission is to be composed of men of recognized experience in or knowledge of the mining industry and mining laws, who shall serve without compensation and shall hold public hearings in the principal mining centers of the West and Alaska, invite suggestions and opinions concerning the existing mining laws and desirable amendments and consider the laws and experience of other countries, and to make report within one year after the passage of the act.

H. R. 1722, by Mr. Taylor of Colorado, provides for the publication of an official journal, to be known as United States Official Bulletin, which shall contain brief notices of the work of the various executive departments and independent bureaus of the Government, under the direction of a committee consisting of five members, one member to be appointed by the President, two members to be chosen from the House of Representatives and from the Senate, selected by the Speaker of the House and the President of the Senate. The heads of departments are required to furnish advance information for publication in this bulletin, which is to be sold to subscribers at \$1 per year, and \$200,000 is appropriated to carry out the provisions of the act.

H. R. 1723, by Mr. Taylor of Colorado, provides for the government construction of a railroad from Gallup, N. Mex., to Durango,

Colo., authorizes the appointment of a commission similar to the Alaska Railway Commission to carry out the provisions of the act, and provides an appropriation of \$50,000. The bill also provides for the issuance of bonds, to be secured by said property, for an amount not to exceed \$4,500,000, to be paid from the earnings of said road and from the selling price and net rentals or royalties which may be derived by the Government from the sale or lease of coal and oil lands in the San Juan coal area in the States of Colorado, Utah, and New Mexico. The bill also provides for the leasing of said railroad, said lease to include an option of purchase, subject to the control of the President of the United States.

H. R. 2316, by Mr. Webb, provides that the Sherman Anti-Trust Law shall not apply to business combinations solely engaged in export trade, providing such associations do not enter into any agreement, understanding, or conspiracy, or do any act, which artificially or intentionally and unduly enhances prices within the United States of commodities of the class exported by such association. It provides that any corporation may own all or any part of the stock of a corporation organized solely for export trade, and, further, that the prohibition against "unfair methods of competition" in the Federal Trade Commission Act shall apply to competitors in export trade, even though the acts complained of are done without the territorial jurisdiction of the United States. The bill further provides for investigations by the Federal Trade Commission, which may recommend a readjustment of the business in case it shall conclude that the law has been violated. In case the association shall fail to comply with the recommendations of the Federal Trade Commission, it is required to refer its findings and recommendations to the Attorney General of the United States for such action thereon as he may deem proper.

H. R. 2611, by Mr. Howard, provides for the establishment of engineering experiment stations in each of the States, Territories and the District of Columbia in connection with State-supported engineering schools or universities. The bill provides that such engineering experiment stations shall become depositories of the Bureau of Standards, and provides for an annual appropriation of \$15,000 for each of the stations thus created.

H. R. 2901, by Mr. Adamson, provides for the enlargement of the Interstate Commerce Commission to eleven members, and provides time of actual or threatened war, may take control of all transportation and communication lines.

H. R. 2931, by Mr. Slayden, provides for a special tax on explosives and a tax upon manufacturers and dealers therein.

H. R. 3223, by Mr. Morgan, provides for the payment to the State of Oklahoma of an amount equal to 5 per cent of the proceeds of the sales of public lands made between



April 22, 1889, and November 16, 1907, such sum to become a part of the permanent public school fund of said State, the interest thereof only to be used; and provides an appropriation of \$500,000 to carry out the provisions of the act.

H. R. 3225, by Mr. Morgan, provides an appropriation of \$20,000,000 to be paid to the State of Oklahoma, to be accepted in full payment and satisfaction of claims against the United States for taxes on lands and property within said State made nontaxable by act of the United States.

H. R. 3232, by Mr. Ferris, provides for the leasing of public lands containing deposits of coal, phosphate, oil, gas, potassium, or sodium.

H. R. 3633, by Mr. Foster, provides for the regulation of the manufacture, distribution, storage, sale, use and possession of explosives in time of war or during national emergency. (Elsewhere in this issue will be found an account of the hearings upon this bill before the House Committee on Mines and Mining.)

#### SENATE BILLS

S. 12, by Mr. Owen, provides for the sale of the coal and asphalt deposits in the segregated mineral land in the Choctaw and Chickasaw Nations in the State of Oklahoma, and authorizes the Secretary of the Interior to prescribe the rules and regulations for carrying out the act, and appropriates \$35,000 to pay expenses of advertising and sale.

S. 22, by Mr. Pittman, to establish a commission form of government for the administration of national affairs in Alaska. The bill provides that the governor of Alaska, the surveyor general of Alaska, and three persons to be appointed by the President of the United States, by and with the advice and consent of the State, shall constitute the Alaska Administrative Commission, to which is transferred the administrative functions of the several bureaus at Washington which have to do with Alaskan affairs.

S. 26, by Mr. Pittman, authorizes the cutting of timber for mining purposes by corporations organized in one state and conducting mining operations in another.

S. 43, by Mr. Walsh, provides that upon relinquishment or surrender to the United States within six months from the date of this act by any locator or his successors in interest of any claim to unpatented oil or gas lands included in any order of withdrawal upon which oil or gas has been discovered, was being produced, or upon which drilling operations were in actual progress January 1, 1914, and the claim initiated prior to July 3, 1910, the Secretary of the Interior may lease to such person or association not to exceed 2,560 acres upon payment of a royalty of not exceeding one-eighth of the oil or gas extracted, each lease to be for a period of twenty years, with the right to renew upon reasonable terms to be prescribed by the Secretary of the Interior.

S. 45, by Mr. Walsh, provides for the leasing of coal, oil, phosphate, gas, potassium, and sodium lands on the public domain.

S. 104, by Mr. Smoot, provides for a commission to codify and suggest amendments to the general mining laws; that the commission shall hold public hearings in the principal mining cities of the West and Alaska; that the commission shall submit its final report within one year after the passage of the act; that each of the commissioners shall receive a salary of \$500 per month and actual or necessary expenses of the commission, including traveling expenses, and appropriates the sum of \$25,000 to carry out the provisions of the act.

S. 385, by Mr. Ashurst, authorizes the mining for metalliferous minerals on Indian reservations.

S. 734, by Mr. Warren, provides for a mining experiment station to be located at Lander, Wyoming, and for an appropriation of \$25,000 to cover the expense of such station during the first fiscal year.

S. 842, by Mr. Phelan, provides for the establishment of a National Employment Bureau in the Department of Labor, and provides that the duties of the Division of Information of the Bureau of Immigration shall be transferred to this Bureau, and authorizes the Postmaster General to extend to the Secretary of Labor the use of the post offices and postal facilities, including postal employes, wherever they can be used in a practical way to carry out the provisions of this act.

S. 950, by Mr. Myers, provides for the non-mineral (surface) entry of lands withdrawn, classified, or reported as containing coal, phosphate, nitrate, potash, oil, gas, or asphaltic minerals in Alaska.

S. 983, by Mr. Smith, of Georgia provides for establishing engineering experiment stations in connection with State universities or engineering schools for the promotion of engineering and industrial research in each of the States and Territories.

S. 1079, by Mr. Jones, creates a division to be known as a Woman's Division in the Department of Labor.

S. 1419, by Mr. Shields, provides for the development of water-power, for the construction and maintenance of dams upon navigable streams of the United States, under the direction of the Secretary of War.

S. 1560, by Mr. Jones of New Mexico, grants to each of the public land States five hundred thousand acres of unreserved, nonmineral, surveyed public lands, the proceeds to be used solely for the purpose of constructing, repairing and maintaining public wagon roads.

S. 1609, by Mr. Shafroth, provides for the entry, location and disposal under the public-land laws of lands now included in water-power site withdrawals, upon the payment to the United States of the value of such lands to be fixed by the entryman and the Secretary of the Interior, and in case they cannot agree, the entryman is authorized to bring suit



against the United States for the condemnation of such lands for the uses and purposes set forth. The bill further provides for the repeal of the last paragraph in the act approved February 15, 1901, which reads as follows, "And provided further, That any permission given by the Secretary of the Interior under the provisions of this Act may be revoked by him or his successor in his discretion, and shall not to be held to confer any right of easement or interest in, to, or over any public land, reservation or park."

S. 1610, by Mr. Walsh, provides for the leasing of water-power sites for a period of fifty years, and thereafter, until the property is taken over and paid for or a new lease is executed unless a shorter period shall be agreed upon and provides that the United States shall have the right at the expiration of the lease, and upon not less than three years notice, to take over all the properties constructed, acquired, or owned by any lessee and valuable in connection with its power system. The rental to be charged for the land so leased may, in the discretion of the Secretary of the Interior, be measured by the power developed and sold or used by the lessee for any purpose other than the operation of the plant. Fifty per cent of the proceeds shall be paid to the State in which power is developed, the remaining fifty per cent to be paid into the reclamation fund. Authority is given by the act to citizens of the States of Colorado and New Mexico to prosecute an action at law or in equity against the Secretary of the Interior, to determine the right to appropriate and apply to beneficial uses the waters of the Rio Grande River and its tributaries.

S. 1816, by Mr. Robinson, provides for the enlargement of the Interstate Commerce Commission so as to consist of nine members.

S. 2017, by Mr. Shafroth, provides for the entry of not to exceed two thousand five hundred and sixty acres of coal bearing land, and for the sale thereof by the Secretary of the Interior by awarding the same through advertising and competitive bidding, reserving the right to reject any or all bids which he may deem to be unfair. The bill provides that within one year after such award, \$10,000 worth of improvements or development work shall be made upon any land so awarded, when patent therefore may issue. It is further provided that in case such property shall become the subject of an unlawful trust, the title thereof shall be forfeited to the United States, and further that one-half of the moneys received for the lands so entered shall be paid to the State in which the lands are situated.

S. J. Res. 33, by Mr. Walsh, relieves the owners of mining claims who have been mustered into the military or naval service of the United States from the performance of assessment work during the term of such service.

## **J. W. PAUL APPOINTED**

### **COAL MINING ENGINEER**

The important post of coal mining engineer of the Bureau of Mines, which was made vacant by the death of L. M. Jones, has been filled by the appointment of J. W. Paul to that place. Mr. Paul was for many years in the service of the Bureau of Mines. As the head of the mine safety division of the bureau's work he made an enviable reputation, and much of the credit for the success of this branch of the work is given to him. A year ago Mr. Paul left the Bureau of Mines to undertake private consulting work. The death of Mr. Jones placed the difficult problem of finding a proper successor before the director of the Bureau of Mines. Realizing that Mr. Paul is particularly qualified for this work, efforts were begun immediately to induce him to reenter the bureau's service. These finally were successful, greatly to the relief of Director Manning and George S. Rice, the chief mining engineer, who anticipated great difficulty in being able to secure a proper man to fill this important place.

## **GOVERNMENT TAKING NO**

### **CHANCES ON SULPHUR SUPPLY**

Plans for the defense of the sulphur bearing region of south Louisiana are being considered by the War Department. Since practically the entire needs of this government and of the allies are supplied by the wells near Lake Charles, Louisiana, it is regarded as imperative to protect them from any eventuality. The wells are not far from the Gulf and are not distant from the Mexican coast.

It is realized that should the demands for ocean tonnage continue to increase, it may be impossible to secure imports of pyrite. If such a contingency were to arise, it would make increased supplies of sulphur necessary. At the same time, the Geological Survey is looking into the matter of increasing domestic production of pyrite. It is believed that the supply of sulphur from this source can be increased materially. Phillip S. Smith, administration geologist of the Geological Survey, is at present in the field looking up the possibilities of increasing pyrite production.

## **Moved to Portland**

The Oregon Bureau of Mines and Geology has been moved from Corvallis to Portland. Since the Bureau of Mines station at Corvallis depends on the cooperative work with the Oregon bureau it also will be transferred to Portland.

## **Moderwell Opens St. Louis Office**

C. M. Moderwell and Company, of Chicago, has opened an office at 2070 Railway Exchange Building, St. Louis, Mo. R. B. Hullhorst will be manager.

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THE

# MINING CONGRESS JOURNAL

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SAFETY-EFFICIENCY-CONSERVATION

No. 6



FRANCIS S. PEABODY  
Chairman Committee on Coal Production

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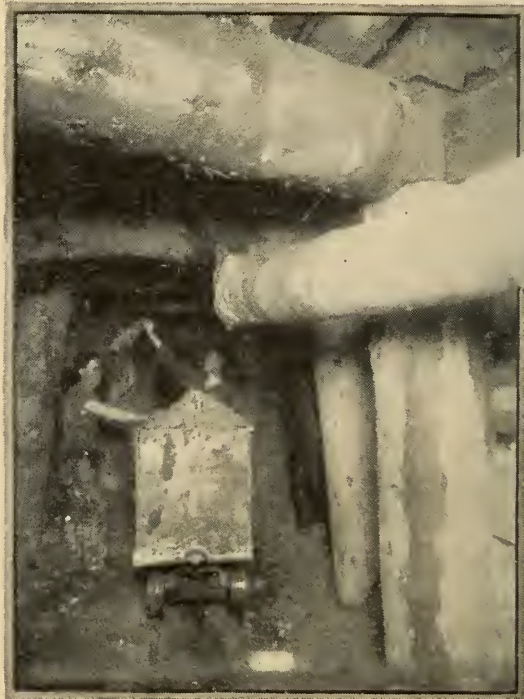
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# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## TWENTIETH ANNIVERSARY

The American Mining Congress was organized at Denver, Colorado, August, 1897. It had been planned that its 1917 convention should properly commemorate its twentieth anniversary and the achievements of the Mining Congress.

The Board of Directors, recognizing that the supreme duty of the hour is to bend every energy toward a termination of the great conflict now pending for the furtherance of the cause of democracy in the world, has decided not to hold a convention this year in order that the best effort of each of our members may be applied to these great national problems.

Many organizations have deemed it their duty to organize special committees, but the Directors of the Mining Congress, because of the widely diversified interests of its members, believe that each can render better service by assisting that department of the Council of National Defense with which he is most familiar rather than cumber these efforts with additional agencies. It is recognized, however, that the importance of the mining industry in carrying on the world war and the economic changes which are necessitated by the stress of present conditions are so great as to call for united effort in order that these burdens may be met without disorganizing its productive machinery, and that careful foresight is required in order that the difficulties of readjustment after the war is over shall be so anticipated and provided for that the changes in future conditions may be made with the least inconvenience and loss to the industry.

As a substitute for its twentieth convention, it has been decided to issue a special Twentieth Anniversary number of the MINING CONGRESS JOURNAL, in which it will be undertaken to concentrate the best thought of the mining industry upon the various questions which would naturally have been discussed had a convention been held. It is hoped that condensed statements giving the views of many thousands of men interested in the mining industry may be assembled and that the best thought upon its varied problems may be better secured by this plan than through a convention.

Engineering problems are not greatly varied by the present disturbances. Economic and legislative conditions will be substantially altered, and because of these changes, a greater need of foresight and preconsideration is necessary.

Contributions will be confined to matters pertaining to the economics of the operation of mines and the distribution and exchange of mining products, leaving as far as may be to the American Institute of Mining Engineers the engineering field which it covers so efficiently.

It is believed that by this plan a better consensus of the views of the mining men of the nation can be assembled and a better purpose served without interfering with the efforts which every member of the Mining Congress desires to make in behalf of his country.

Each of our members is requested to submit to the secretary such questions as in his opinion should be considered in order that this general plan may be made most effective.



## STATE AND FEDERAL REVENUES

The legislature of the State of Utah has very wisely adopted a joint resolution calling for a conference of representatives of the several western states and the Federal authorities at Washington for the purpose of establishing a definite policy in the segregation of State and Federal revenue and for the consideration of the subject of Federal and State sources of revenue. The MINING CONGRESS JOURNAL thoroughly approves the plan proposed and believes that such a meeting would be of very great value to the West and to the country as a whole. All governmental revenues must depend to a large extent upon the practical paying ability of the interests which pay the tax. The support and maintenance of government are therefore best conserved by the creation of conditions which will permit a sufficient contribution through taxation to provide the necessary expenses of government without too great burdens upon the taxpayer. The United States has been very fortunate in the past in being able to meet its expenses by indirect taxation. This indirect taxation has its source in the people's prosperity, in that import and internal revenue taxes cannot be collected except there be a consumption of the imported goods and those articles upon which an internal revenue tax is laid. These sources of revenue yield in proportion to the extent to which these goods are used by the public. The prosperity of the various sections of the United States is therefore of vital concern to the national government. The Constitution of the United States provides that all taxes shall be uniformly assessed. It will therefore be proper for this conference to consider the fundamental principles involved in the production of revenue, and the proper division of that revenue between the Federal and State governments. The MINING CONGRESS JOURNAL urges that immediate action be taken upon this resolution in order that this conference and its recommendation may precede the action by Congress upon the many bills before it having to

do with the fuel and power resources of the west. An analysis will demonstrate beyond question that the proposed leasing bills now before the Congress of the United States will put a burden of taxation upon some states which is not paid by other states and therefore in contravention of the principles laid down by the national Constitution.

Sec. VIII of Article I of the Constitution of the United States says:

The Congress shall have power:  
To lay and collect taxes, duties, imposts and excise, to pay the debts and provide for the common defense and general welfare of the United States; *but all duties, imposts and excises shall be uniform throughout the United States.*

The lowest royalty proposed in any of the many leasing bills which have been considered by Congress provides for the payment of a royalty of two cents per ton to the Federal Government upon all coal produced under any proposed lease. This would, to that extent, put a tax upon western states not paid by eastern states in which coal lands had passed into private ownership before this new plan was considered.

As an illustration, let us suppose that the coal reserves of Pennsylvania had originally been placed under a leasing system. Pennsylvania's production last year was approximately 165,000,000 tons of bituminous and 90,000,000 tons of anthracite. A royalty of two cents per ton upon this production would have produced more than \$6,000,000. What would Pennsylvania say if she were assessed six million dollars upon her production while her competitors in the coal market were exempt from such taxation? And not only that, but the State had been deprived of the right to tax this property which now yields a large revenue for the support of the State Government. Pennsylvania's wail would be long and loud and probably effective because she has thirty-two members of Congress. Montana, Wyoming, Utah, Colorado and New Mexico combined, have but ten members and being without power to successfully resist, their industrial

growth is to be so hampered by unequal taxation as to hinder that growth in population which would put them on a par with Pennsylvania although each of these States has equal coal reserve and double the area of Pennsylvania.

West Virginia in 1916 produced approximately 75,000,000 tons of bituminous coal. At two cents per ton royalty this would have netted the Federal Government \$1,500,000. What would the people of West Virginia say if the State were deprived of the right to tax a considerable part of the property which she is required to protect and also singled out to pay one and one-half million dollars taxes to the Federal Government while the surrounding coal producing states were exempt from this federal tax?

It may be said in reply, and with much of truth, that had this principle been applied to any one of these states from the beginning that the coal production therein would have been so small as to make the tax a matter of small importance. It is just this to which the western states object most strenuously. The injustice of such a tax is so apparent that no further argument is necessary. But there is still a stronger reason against the proposed system. That it carries with it the necessity for control by agents of the Federal Government under restrictions which would destroy executive power in the management and prevent efficiency in operation and economy in production. The principle involved constitutes one of the most important internal questions which faces the American people. By all means, let the conference proposed be called. By all means, let the President of the United States send a strong delegation. By all means, let each House of Congress send a strong delegation of men in whom it has confidence. Let each of the states involved be represented by the proper delegation and let this conference go carefully over all of the issues involved in this controversy. THE MINING CONGRESS JOURNAL believes that the proper discussion of these subjects will result in a practically unanimous recommendation to Congress, and it believes that that recommendation should precede

any action on the part of the Congress of the United States which has for its purpose a revolutionary change of the principles upon which western pioneers have transformed the great American desert into an empire of civilization.

## COOPERATION IN THE MINING INDUSTRY

The American Mining Congress is a great cooperative agency, looking to the complete cooperation of all branches of the mining industry. It hopes to bring the combined influence of every branch of the industry to the solution of the problems of each branch. It believes that the Government and big business should know each other better; it believes that capital and labor should know each other better, and that all these forces should cooperate to accomplish the highest efficiency and conservation in the mining industry. These results can only be accomplished through perfect cooperation. A perfect cooperation includes your assistance; it includes the assistance of all of your friends who are not already allied with the movement. Business conditions everywhere interest you; labor conditions everywhere interest you. Gold mining in Colorado, iron mining in Michigan, copper mining in Montana and Arizona, oil mining in Oklahoma and California and coal mining in nearly all the states interest you and have a vital influence upon your prosperity. Cooperation is more essential in mining than in any other industry, because the world's whole supply of raw material, for this and all future generations, is now in existence. This available supply being a constant menace to prices calls for a better cooperation among mining men. The MINING CONGRESS JOURNAL will keep you posted as to national activities which affect your business and will discuss economic problems in which you are interested.

Each issue carries 40,000 words of absolutely original matter, gathered by close contact with Congressional committees and the various bureaus which have to do with mining. Every mining man



of importance should be an active member of the American Mining Congress. Those whose interest is not so important should be associate members. All memberships include a subscription to the MINING CONGRESS JOURNAL.

No other business is so vital to the nation's industrial prosperity. No other business needs cooperation so greatly. There is no other national agency through which this cooperation can be secured.

### "THE FOOD SITUATION"

The press of the country is vigorously protesting against what is termed the criminal extortion of food gamblers. To the extent that these agencies have been responsible for the general belief that we are facing a food famine there may be reason for these criticisms. As a result of the fear thus created large stocks of food supplies have been purchased by individuals, thus creating a food shortage. One man is reported to have bought \$1,000 worth of groceries, including twenty barrels of flour. There is not now and never has been to exceed a six weeks' supply of food in the country; it is plain that if 5 per cent of the people shall each lay in a two years' supply of a certain article, the whole available temporary supply will be immediately exhausted. The example given represents an extreme case, but it remains true that the general increase in the purchase of supplies has resulted in a scarcity which has stampeded the market. The blame should rather be laid to the door of those leaders of public thought who have become unduly agitated in the face of the present unusual conditions. Those who are now extravagantly agitating the public mind in order that public sentiment may be aroused to a sense of the needs of the present situation are as far too radical in these expressions as were those upon the other side in the recent past who insisted that the country was absolutely safe from all impending dangers. There is no cause for alarm. The food supply upon the whole is practically normal.

### PREACHING AND PRACTICE

In an address before the National Association of Manufacturers in New York City, William C. Redfield, Secretary of Commerce, in commenting upon the interdependency of labor and capital, said:

"This is no time to rock the boat.

"Consult labor. Give it a fair and free voice and meet it half way—not as an adversary to be feared, but as a friend to be considered. Our general efficiency must not be interrupted by local misunderstandings.

"There should now be no disturbance of labor standards," he continued. "No suggestions of altered hours. Let these things rest till the nation itself calls. Keep the standards of living untouched and the standard of friendly leadership exalted." . . .

We fully approve these sentiments so far as it is possible to carry them out, but when necessity requires a greater production than is possible under these conditions then we believe the eight-hour standard must be set aside. This condition seems now to prevail in some of the departments of Washington, and we are glad to note that the President of the United States, while probably fully approving the sentiments expressed by Mr. Redfield, has issued an order setting aside the eight-hour restriction where the necessity of the nation seems to require it. The order is as follows:

#### **Suspension of Eight-Hour Clause in Contracts** (Executive order.)

Under authority contained in the naval appropriation act approved March 4, 1917 (Public No. 391, Sixty-fourth Congress) it is hereby ordered that the provisions of the eight-hour act of June 19, 1912, are suspended with respect to persons engaged upon work covered by contracts with the United States, made under the War Department, for the construction of any military building or for any public work which in the judgment of the Secretary of War is important for purposes of national defense in addition to the classes of contracts enumerated in Executive order of March 24, 1917.

It is further declared that the current status of war constitutes an "extraordinary emergency" within the meaning of that term as used in the eight-hour act of March 3, 1913 (37 Stat. 726), and that laborers and mechanics employed on work of the character set forth above whether employed by Government contractors or by agents of the Government may, when regarded by the Secretary of War as necessary for purposes of national defense,

be required to work in excess of eight hours per day, and wages to be computed in accordance with the proviso in the said act of March 4, 1917.

This order shall take effect from and after this date and shall be operative during the pending emergency or until further orders.  
WOODROW WILSON.

The White House, 28 April, 1917.

The men on the farms are now and will continue to work more than eight hours daily. When the necessity requires it, the men in the mines and the munitions factories will patriotically meet the requirements as is being done by the Government employes, some of whom under the Presidential order are now working thirteen hours each day.

#### THE PROPERTY OWNERS' COOPERATIVE COAL COMPANY

The MINING CONGRESS JOURNAL is a great believer in cooperation, but it is also a believer in the theory that "the shoemaker should stick to his last."

Thirty thousand apartment house owners in Chicago have formed a coal mining company and propose to produce their own coal. This action has been determined upon because of the fact that in the recent past the market price of coal has been above the cost of production. For many years these same apartment house owners have been supplied with coal at less than its cost and the coal operators who have furnished this coal have done so at a positive loss of not less than ten cents per ton. During the recent era of high prices, most of these houses have been supplied with coal under old-time contracts at very much less than its cost of production, in many cases the operator having received thirty or forty cents per ton less than it cost him to produce it.

Notwithstanding the fact that this apartment house company will eliminate selling expenses by virtue of having a certain market already created and that it can operate continuously because the demand can be accurately estimated in advance, thus eliminating two great expenses which the average coal operator must meet, viz., selling cost and the cost of idle periods, we venture the assertion

that within five years the members of this new coal company will find their coal is costing more money than it can be obtained for in the open market, and that the mines now being purchased will be for sale. This prediction will surely come true unless the combined intelligence of coal operators shall evidence more of sagacity than in the past, when each slump in the market has brought more intensive price cutting. If these conditions shall again prevail the loss on the sale of these mines will consume all the advantage gained by temporarily securing cheap coal.

Let us hope that these losing conditions may not again prevail in the coal industry.

#### LOYAL SERVICE EXPECTED

In the May issue of the MINING CONGRESS JOURNAL it was suggested that conditions might be such in this country as to require that its workers should work ten hours each day to make up the shortage in our productive capacity created by the withdrawal of so large a number of men for service in the Army and in the manufacture of munitions of war. This editorial has led to considerable criticism upon the grounds that under color of an emergency it is sought to break down the standards which have been secured by much agitation and many hard fought battles, and that if these privileges are now surrendered their recovery will require the same tedious process which has led up to present conditions. If the responsibilities of this nation are to be met effectively, the man on the farm, the man in the mines, and the man in the trench must render the very best service of which he is capable. If the offer of the National Labor Council to President Wilson means anything, it means that the best service of which its members are capable shall be rendered. This offer was accepted by the people of the United States in good faith and the MINING CONGRESS JOURNAL hopes that the representatives of labor will not discredit the patriotism and loyalty of the members of organized labor by any quibbling



which will interfere with its best efforts. The Annalist sums up the best thought on this subject in the following language:

"It will be well for every citizen of the United States to think first of the national emergency and bend his every effort to that end. We are not certain, however, that a sufficiently clear distinction is being drawn in labor circles between what may be attempted for private ends and what may be needed for national purposes. Labor should not be made to yield up any right or any privilege during the period of the war for the sake of adding to private profits, but labor ought to be willing to forego any privilege or any right for the sake of helping the national cause. The line should be clearly drawn between the two. Labor is justified in denouncing any effort, from whatever quarter it may come, to attempt to force a lessening of its privileges or rights for the sake of private gain; but let not labor be misled into confusing that with the just demands which the country may have to make upon labor and capital alike in the serious work which it has in hand."

At the present time the employees in the Bureau of Engraving and Printing at Washington are working thirteen hours each day. Shall the underpaid women employees of the Government be required to work overtime to meet a national emergency while the broad-shouldered laborer shirks his duty upon the ground that it "would impair fundamental rights which are the basis for our freedom?" Notwithstanding its critics, the MINING CONGRESS JOURNAL desires to stand squarely upon its editorial statement of last month that "It is no time to quibble over the niceties of contracts, or the future relation of labor and capital. It is time for every man to render the very best service of which he is capable to the fullest measure. A great national emergency requires it. Let us meet that emergency now and arrange our adjustments after the emergency has been met."

#### THE COAL BOARD

After three weeks of operation, the fuel board has established itself in the public confidence. This is a real achievement. It is not going to be easy to retain this confidence. It cannot be expected that the board will be a popular body. Its activities necessarily will make it the target of attack. Confidence, however, will not be lost if the board goes

ahead, without fear or favor, and does what is best for the country.

There is no doubt in our minds that the board will act unvaryingly in the interest of the whole people. There will be special favors neither for the coal operators nor for any other body of citizens. There will be favor for no industry and for no section. We know this because we are acquainted intimately with the distinguished personnel of the board. Outside of the coal industry and certain restricted areas, we daresay, that the names of Peabody, Moderwell, Wariner, Pierce or Storrow do not bear the same significance as they do to us. Consequently every effort must be made to give full publicity to every act of the board which will not convey valuable intelligence to the enemies of our country. Frankness and full publicity are two of the surest aids in retaining the confidence of the public.

#### THE BUSINESS OUTLOOK

A temporary cessation of purchasing caused by a foolish panic-creating propaganda for economy has developed agitation among the retail dealers of the country and created a temporary condition of business restriction.

Aside from this temporary scare, business conditions are good. There is every reason to believe that business requirements will gradually expand. There is no food shortage and yet we need to produce at least 25 per cent more food than normal in order to meet our own needs and the needs of our Allies. There is no coal shortage, and yet we shall need to produce at least 50,000,000 tons of coal more this year than last in order to meet the increased uses for coal at home, both in manufacturing and for the Navy, and also meet the needs of our Allies. To meet these demands, business must be very greatly stimulated—it cannot be otherwise. There have been times in the history of our country when a shortage of money has restricted business operations. Today money is plentiful. Its abundance constitutes one of the gravest dangers which we are to face in the future.

The MINING CONGRESS JOURNAL commends the statements made by Senator James Hamilton Lewis before the Washington Chamber of Commerce. After calling attention to the fact that something of a panic has seized our usually sensible men, Mr. Lewis declared:

"Our nation is not hungry; our people are not starving; our country cannot be starved; the manufactories need not be closed down; business need not be limited, and enterprise, instead of being curtailed, should be encouraged and enlarged. Let there be an end to this cry of despair, this wail of disaster."

The MINING CONGRESS JOURNAL believes that the country is now facing the most marvelous industrial expansion which it has ever known—an expansion carrying with it inherent dangers which can be neutralized by proper forethought. It hopes that a statesmanship will develop able to neutralize the naturally disturbing effect of a change from high prices to lower prices. It cannot be anticipated that the present inflated prices can continuously prevail, but it is certain that so long as the war lasts there will be an increasing demand for the products of the farm, the mine and the factory. After the war there will be a continuing demand for material with which to rebuild the devastated battlefields of Europe, to restore productive machinery at home now being exhausted to meet the super-demand and to replenish the warehouses which the war's demand has depleted. At no time in history has the business future been more promising, and at no time in history has there been a greater need for wise statesmanship.

#### **TRADE COMMISSION TO WATCH DISTRIBUTION OF ANTHRACITE**

In its interim report of May 4 to the United States Senate the Federal Trade Commission promised that its utmost efforts would be used to assure fair distribution and fair prices of anthracite coal.

The commission has sent agents into different parts of the country, who will observe closely throughout the anthracite trade the operation of plans formulated at recent conferences of the commission with operators, jobbers and representative retailers for bringing prices down to moderate levels and keeping them there.

These field agents will report promptly to the commission for appropriate action any renewal of the intolerable abuses that marked the activities of certain elements in the trade during recent months.

The independent operators have realized that the situation calls for public spirited action on their part, and it is expected that they will reduce their present prices to moderate levels for the season and cooperate in every way with the commission.

#### **UNIFORM PRICE SOUGHT BY ALL IN COAL INDUSTRY**

Uniform working time at the mines and uniform prices for coal throughout the year represent the millenium toward which the coal mine operator, the shipper, and the responsible retail dealer have been looking. It is confidently expected that those engaged in the coal trade will give every aid and assistance to their customers and to the country in general in endeavoring to avert next winter a repetition of the coal shortage just experienced. The producer of coal will evidently profit more if he ships steadily throughout the summer than if the price later reaches unheard-of figures and he can not get his product to market. (From C. E. Leshner's "War Bulletin" on coal.)

#### **WOLFLIN SUBMITS SCHEDULE FOR MERIT RATING OF MINES**

Merit rating standards for mines have been drawn up by H. M. Wolflin, the representative of the Bureau in California. Mr. Wolflin has submitted his draft of the schedule to George S. Rice, chief mining engineer. The schedule is now being studied carefully in the Bureau. While the subject is one presenting such complications as to make impossible a perfect scheme of rating, it is believed a very efficient schedule will be evolved from the draft submitted by Mr. Wolflin.

#### **Explosives Indispensable**

"Explosives are essential to our civilization; we can not go on without explosives. Transportation, mining, agriculture, and all of the industries are founded today upon the use of explosives. We could not get out material as cheaply or as readily, and in many instances could not get it out at all today, without the use of explosives."—Charles E. Munroe, consulting explosive expert, Bureau of Mines, before the House Committee on Mines and Mining.

#### **Tells of Grand Canyon**

An example of unusual enterprise is the publication by Fred Harvey of N. H. Darton's story of the Grand Canyon of Arizona. The publication is copyrighted by Mr. Harvey. It contains numerous illustrations taken in the Grand Canyon. The book is printed in splendid style.



### GOVERNMENT EXPERTS WELL KNOWN TO MINING MEN

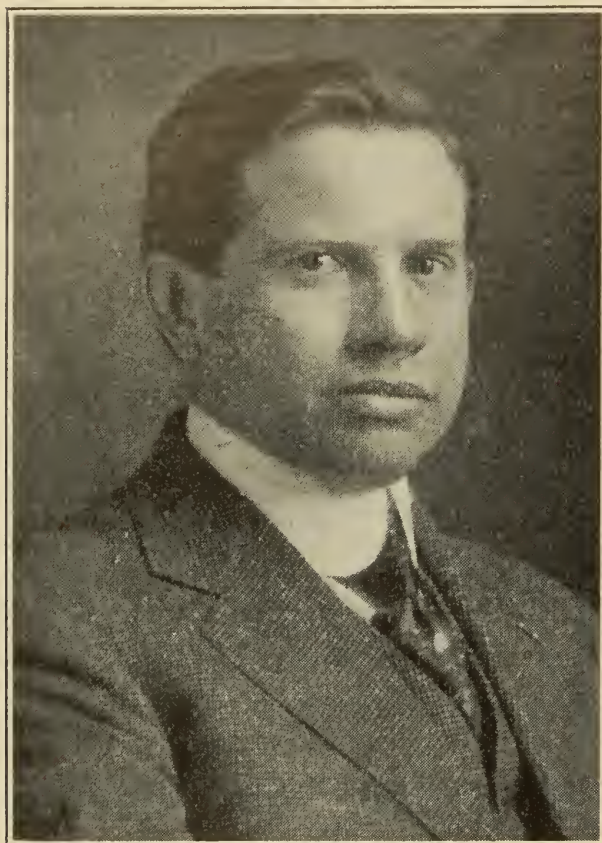


*Photo by Harris & Ewing*

**DORSEY J. PARKER**  
Mine Safety Engineer

Dorsey J. Parker, the mine safety engineer of the Bureau of Mines, was born in Roberts, Alabama, October 11, 1877. Other biographical facts are as follows:

Graduated from the Alabama Polytechnic Institute, 1901; studying later at Harvard University.

Member, American Society of Civil Engineers.

Two years, assistant division engineer of the Tennessee Coal, Iron and Railroad Company.

Eight years, chief mining engineer and assistant general superintendent of the Galloway Coal Company of Memphis, Tenn.

One year, superintendent of mines of the Corona Coal and Iron Company, of Corona, Alabama.

Two years, general superintendent of the American Coal Corporation of Birmingham, Alabama.

From November, 1914, to March, 1916, mining engineer, United States Bureau of Mines, in charge of mine rescue car No. 8, assigned to West Virginia and Eastern Kentucky; March, 1916, to December, 1916, assistant to

the Mine Safety Engineer of the Bureau of Mines; December, 1916, to date, Mine Safety Engineer, in charge of mine accident investigation, the study of accident prevention and the operation of the bureau's mine rescue cars and rescue stations variously located throughout the United States.

### PUBLIC THE POTENT FACTOR IN THE FUEL SITUATION

It is perhaps difficult for many to understand why, in view of the facts that nearly 600,000,000 tons of coal was mined and used last year and an unlimited supply is yet unmined, there should have been any trouble in getting fuel in the winter of 1916-17, or to believe that there may be trouble again next winter. A public fully informed on this matter and ready to cooperate in preventive measures will be the best means of averting serious conditions later.

Those who have been keeping in touch with conditions in the bituminous-coal industry foresaw and forecast the recent great increase in prices months ahead, but no one was so bold a year ago as to predict that in the near future prices would reach and stay at so high a level. These high prices, in conjunction with a serious shortage of coal at consuming centers, turned the thoughts of users throughout the United States to the subject of fuel and furnished a motive for many investigations, Federal, State, and municipal.

What has happened to the coal industry since the European war began is intimately and intricately tied up with the extraordinary things that have happened to all machinery of domestic production, including labor and transportation, and all these things are in one way or another related to the great war. The consumer in the United States has not had to confront the cutting off of imports of coal, for this country, above all, is self-contained in its coal supply and imports but trivial amounts. The warring nations in Europe have not called for coal as they have for foodstuffs and metal products, and coal exports to neutral countries—for instance, to South America—although increasing somewhat, have fallen far below expectations in 1914. Exports of bituminous coal were but 1,100,000 net tons greater in 1916 than in 1913, an increase of 5 per cent, and the total exports represented only 4 per cent of the production in 1916.—(From C. E. Leshner's "War Bulletin" on coal.)

### Alaska Mining Report

Much interesting information with regard to the mining industry in Alaska is contained in the annual report of William Maloney, territorial mine inspector for Alaska. The report covers eighty-six pages of printed matter and is intelligently and concisely prepared.

# COMMITTEE ON COAL PRODUCTION BEGINS ITS WORK AUSPICIOUSLY

Cooperation of Operators with the Government in Meeting Demands of the Existing Emergency is Assured—Chairman Peabody Organizes His Board and Gets Down to Work Quickly

That the Committee on Coal Production of the Council of National Defense is going to be able to solve the intricate problems that confront it is a very general prediction from those who have kept abreast with the board's activities since its initial meeting, May 9. Much of the work being done by the committee is of a nature that it can not be discussed until definite conclusions are reached. Negotiations have been in progress during the past two weeks with the Navy Department regarding the furnishing of coal to the navy at a pre-war rate. The committee brought about the pooling arrangement which was agreed to by those interested in the movement of the lake coals. An account of this arrangement is given in another column. The committee also has arranged a conference looking to a similar arrangement with regard to tide-water coal.

The personnel of the committee and the assignments of the different coal producing regions are as follows:

Francis S. Peabody, Chairman.

George W. Reed, Secretary.

E. J. Berwind, New York, representing Central Pennsylvania, Maryland and Low Volatile fields of West Virginia.

W. W. Keefer, Pittsburgh, Pa., representing Western Pennsylvania, Ohio and Michigan.

Van H. Manning, Washington, D. C., Director, United States Bureau of Mines.

C. M. Moderwell, Chicago, Ill., representing Illinois, Indiana and Western Kentucky.

E. L. Pierce, Syracuse, N. Y., representing Coke Industry.

Erskine Ramsey, Birmingham, Ala., representing Alabama, Tennessee, Georgia and North Carolina.

George Otis Smith, Washington, D. C., Director, United States Geological Survey.

James J. Storrow, Boston, Mass., representing New England.

H. N. Taylor, Kansas City, Mo., representing Arkansas, Iowa, Kansas, Missouri, Oklahoma and Texas.

S. D. Warriner, Philadelphia, Pa., representing Anthracite Coal Industry.

J. F. Welborn, Denver, Colo., representing Colorado, Montana, New Mexico, North Dakota, Oregon, Utah, Washington and Wyoming.

Daniel B. Wentz, Philadelphia, Pa., representing Eastern Kentucky, Virginia and High Volatile fields of West Virginia.

In announcing the appointment of the committee the Council of National Defense said:

The Committee on Coal Production of the Council of National Defense is designed to increase the output of coal at the mines and to cooperate with the Committee on Raw Materials, of the Advisory Commission, and with the Transportation Committee, also of the Advisory Commission, in accelerating the movement of coal to points where the need is greatest.

This committee, it is expected, will aid in solving one of the biggest and most difficult problems in connection with the defense of the nation. The needs of the Government itself are large, but the indirect needs are still larger. With production increased to meet the increased needs of the nation, under war conditions, there will be required improved facilities for prompt transportation of coal from the bituminous, anthracite and coke fields.

Mr. Peabody, president of the Peabody Coal Company, of Chicago, who has been designated as chairman of the Committee on Coal Production, has turned over his business affairs to others, so that he may give his entire time to the Government's service. His committee is representative of all branches of the coal business and it will have the cooperation of the firms and corporations upon whose spirit of patriotism and cooperation the Government must rely.

There will be subcommittees, working in various parts of the country, in order to bring about direct contact with the producers and business firms whose aid will be sought. The Committee on Coal Production will work likewise in harmony with the Labor Committee in maintaining good working conditions, which are essential to increased production.

It is clear that there must be a tremendous increase in production at the mines; that there must be no interruption of any of the mines; that there must be improved freight facilities. The Committee on Coal Production will cooperate with the mine owners and with the Labor Committee in minimizing the danger of strikes and bringing about mediation and conciliation and with the Transportation Committee in making available more cars for the shipment of coal and giving them a clear track.

Cooperation with the concerns engaged on Government work and in need of immediate coal supplies will be an important branch of the committee's work.



The committee addressed the following letter to the coal operators of the United States:

Under the act of Congress approved August 29, 1916, providing that a Council of National Defense be established "for the cooperation of the industries and resources for the national security and welfare, to consist of the Secretary of War, the Secretary of the Navy, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce and the Secretary of Labor," authority is given to the Council to organize subordinate bodies for its assistance and cooperation.

Pursuant to this authority the Council of National Defense has appointed Mr. Francis S. Peabody chairman of and with authority to appoint a Committee on Coal Production, representative of the coal-producing districts throughout the United States. It is the intention that the members of this committee shall act as chairmen of subcommittees to be appointed by them in their respective districts.

The committee convened in Washington on May 9, at which time, in addition to the members of the committee, there were present Secretary of the Interior Franklin K. Lane, Mr. W. S. Gifford, director of the Council of National Defense, and Mr. Bernard M. Baruch, chairman of the Committee on Raw Materials, Minerals and Metals, of the Advisory Board of the Council of National Defense, from whom an outline of the proposed scope of the committee's work was received.

In approving the appointment of this committee and laying before it the work that it was expected to do, Secretary Lane referred to the cooperative spirit already shown by the business men of the country in this mobilization of the resources of the United States. "It would surprise the nations of Europe to know how intense is the spirit of loyalty on the part of our business men and capitalists. . . . You are at the very root and foundation of the great industry—the war industry—that presents itself on the other side of the water. . . . Now, there are two ways of dealing with a problem of this kind. One way is by the hearty cooperation of the men already engaged in the industry. The other way is by compulsion. My experience in the Interstate Commerce Commission led me to believe that the larger men in the railroad industry had quite as much vision as I had, and if I could show them the importance of an occasion they would try to meet it. So, instead of resorting to compulsion, instead of taking over mines and great operating plants, we are endeavoring to put you men at your best. This war is a challenge to us."

The country at the present time in the matter of its fuel production is confronted with a great emergency.

Notwithstanding the increased production of coal from practically every district, the increasing requirements to meet the needs of all classes of industry, as well as for the comfort and welfare of the people and the transportation of troops, munitions, food and other

products, together with the supplying of our allies, and for our national protection—all these demands are liable to surpass the capacity of our mines unless the full cooperation of the mining, transporting and distributing agents of this country is secured. This emergency requires not only the development of the highest efficiency, especially on account of a diminished supply of labor used in the production of coal, but also in more comprehensive methods of cooperation by the coal producers with the transporting and distributing agencies, so that not only a full production will be secured, but also that this production finds its way over our railroads into those centers where the most urgent need exists. If the demand for this product continues to increase it may be necessary that active steps be taken to so far as possible confine the distribution and use of it to those activities which are more nearly vital to the welfare and protection of the nation. That this may not effect an unnecessary hardship upon the domestic welfare of our people, it is necessary to promote the closest cooperation, and because of the duty laid upon us to promote this welfare we urge upon you that you cooperate with this committee in its efforts to promote the largest production, the most equitable distribution, and the highest use to produce the best economic results. No doubt an emergency exists, but it is the belief of this committee that with your hearty support and the assistance of the public in conserving supply, sufficient fuel can be had to meet public necessity.

We believe that the first essential toward an increased production of coal is a close cooperation between mine employer and mine employee, and inasmuch as the United Mine Workers of America and the mine operators in several districts have already pledged by joint resolutions to the Council of National Defense, under whom this committee works, and have nominated committees, the services of which have been offered to the Council of National Defense to this end, we now call upon the several committees to use their best and continued efforts to increase, in so far as they are able, the production of coal for the public necessities by keeping the mines continuously at work, avoiding labor disputes and unnecessary shutdowns. The operation of well-established mines should not be impeded, and we suggest and urge that the practice of moving miners from the mines of well-established producing companies or communities to other districts be discouraged, as this practice creates a state of unrest and tends to decrease the total output of coal, interfering with the stability of the industry which is necessary for the highest efficiency. An effort should be made to instill in the mind of the individual miner and operator, as well as the organized body, the necessity of individual effort and continuous performance so far as work is offered. The miner or the company's representative who remains at work renders as patriotic service as the man at the front.



The total production of coal throughout the country has been seriously curtailed by difficulties in transportation service and unequal distribution of cars, resulting in shortage in the number of cars available for loading, as well as congestion in the avenues leading to the points of distribution. We urge upon the operators that they pledge themselves to load all cars obtainable in the shortest time after the same become available, and that they further take up and urge their customers to release these cars at the earliest possible date after delivery so as to make them available for further use without unnecessary delay, and that all practices, such as unnecessary holding of cars for reconsignment or other purposes, be discontinued except when absolutely necessary for the public welfare.

Transportation interests of this country have, at the suggestion of the Council of National Defense, formed a committee appointed by the Council, whose duty it is to coordinate and promote the efficiency of our railroads and by agreement with the heads of the various railroad companies of this country the general policy of their operation has been delegated into their hands. It is the purpose of the Committee on Coal Production to work in the closest harmony with the Committee on Transportation and Communication. We urge distributing interests, especially in the centers of large population, in so far as is possible to deliver coal to their customers along normal and ordinary lines without creating unnecessary panic. We urge in turn upon all such distributors that information be sent to this committee of conditions in such cities as may be benefited by a closer cooperation of all concerned in our effort to supply all communities with their requirements.

If it is found that in any districts surplus coal is obtainable at this time over and above the actual needs, it should be divided as equally as possible and stored in the bins of the ultimate consumer so that the normal operation of the industry so far as is possible may be continuous, which will tend to prevent the necessary hardships which result from an unequal distribution of coal.

Already the centralization in the operation of our transportation lines, which has been vested in its committee, has proved of the greatest benefit to the coal industry, and we believe that a like centralization secured through this Committee on Coal Production in all such matters as are furthered by the coordination of all interests will promote a still higher efficiency and be of greater benefit to producer as well as consumer.

Secretary Lane expressed to this committee the desire of the Government that the business men of the United States feel that the burden of carrying on this war rests in no inconsiderable part upon those who represent the genius of economic and industrial life. In meeting the present emergency you can build for the future betterment of the industry by stabilizing it along sound economic lines. Hearty co-

operation between mine worker and operator, and between producer and consumer expresses the best type of patriotism. The cooperation of the representatives of the Eastern semibituminous coal districts in agreeing to furnish the United States Navy with its next year's supply on satisfactory terms presents an example of the splendid spirit which we believe will characterize the coal industry as a whole. This is the patriotic opportunity for coordinated effort and cooperative service to the nation. Therefore, we feel sure we can rely upon your hearty support.

Addressing the Committee on Coal Production at its initial meeting recently, Franklin K. Lane, the Secretary of the Interior, said:

"One of the chief gratifications that I have had, and perhaps it is the greatest that I have had since the war began, or rather since we instituted the work of mobilizing the resources of the country, has been the cooperative spirit shown by the business men of the country.

"Ever since this war started I have been in receipt of letters from bankers, railroad men, mine owners, engineers, lawyers, men of the largest capacity and the largest income, tendering their services to the United States and offering to put not only their own services, but their own plants at the service of the Government. It would surprise the nations of Europe to know how intense is the spirit of loyalty on the part of our large business men and capitalists.

"The idea that we are now working out is to get you people—and when I say 'you' I mean not only the coal men of the United States, but those men who are large employers of labor, who are capitalists, in the sense that they use capital for the development of resources—to get you to cooperate in meeting the national need. I don't know to what extent you realize, but I presume you do realize as fully as myself, the greatness of this occasion. Not merely as a matter of producing men, and feeding men and getting them over to the other side, but producing also those things that the Allies need, and that we ourselves need.

"There was a time—and it is only a century since—when practically the one thing needed by an army was food. When the lord on the hill wanted to fight his rival, to take a slice of his territory away, he had to concern himself with having a certain number of fighting men, and then supplying them with food. War is now an industrial game; and the foundation of industry, as we know it now, is coal.

"And so it is that you are at the very root and foundation of the great war industry. Unless we have an abundance, or at least a sufficiency, of coal, war cannot be carried on.

"Now, there are two ways of dealing with a problem of this kind. One way is by the hearty cooperation of the men already engaged in the industry. The other way is by compulsion. My experience in the Interstate Commerce Commission led me to believe that the larger men in the railroad industry had quite



as much vision as I had, and if I could show them the importance of an occasion they would try to meet it. So, instead of resorting to compulsion, instead of taking over mines and great operating plants, we are endeavoring to put you men to your best. This war is a challenge to us. It is a challenge to every miner and to every operator, to every railroad man and to every inventor as well as a challenge to every soldier. It is up to us to show what we can do; to prove to the men on the other side of the water that out of 150 years of freedom and the exercise of personal initiative and political independence we have developed a quality of genius that is superior to what they have been able to develop in the shorter period that they have enjoyed the benefit of free institutions. We have a reputation throughout the world as the world's greatest organizers. Let us prove that the reputation is deserved.

"The problem that confronts us is not merely to meet our own demand, but a world demand when necessary. That is what this is. You know what coal is selling for in Italy, in Portugal, and in France. We do not know how much of that demand must be met from American mines. I think that by fall it will be up to us to contribute very largely to the support of the munition works and the other industries, as well as the domestic supply of those countries across the water.

"Ours will be a problem of production and a problem of transportation to the seaboard; and then, somehow, out of the blue, must come some way of solving the problem of getting the coal across the water.

"As I said at the beginning, a war cannot be carried on today without coal. So, in working for Uncle Sam, you are working for those on both sides of him and behind him; for the little powers that have been oppressed, and for the great powers struggling for their lives.

"I regard this as one of the absolutely essential committees. The spirit you have shown in responding to the invitation of Mr. Peabody is one upon which I congratulate you. I know you will meet our national needs. How you can do that best must be worked out in detail by yourselves.

"There are many men who believe that all of these problems can be solved by some wave of a magic wand. You who have dealt with men and with large problems, know that there is no such mysterious way of solving these great problems. They are largely problems of detail and of the management of men; of getting the machinery in motion; of getting the men to work together harmoniously. Of course, your machine is not only the machine of the mines, but also of the railroads, with which your committee must deal in the closest cooperation.

"What do the railroads expect to do? They have gathered the executives of 250,000 miles of railroad, and have organized them practically as a single unit. They have brought them together upon the theory that the com-

mittee of five should handle them as one system, in so far as service is concerned.

"England at the beginning of the war was prepared in one respect at least, that is, in respect to her railroads. The minute war began the government took over the railroads, upon an extremely single plan; viz., that they should be paid the amount of net revenue per annum that they had received in 1913. Then the railroads were tied together. Unnecessary terminals and yards were eliminated. Things were so disposed as to unite all the railroads of England into a single system. I was surprised, in talking to Mr. Thomas, a member of the British war delegation, a member of Parliament, and president of the Railroad Men's Union over there (and that is an organization of 400,000 men), to learn what has resulted. Mr. Thomas told me that, notwithstanding the fact that the government pays nothing for the transportation of troops, munitions, or actual war material, business had so increased, and the economies created were so great, that, after paying the 1913 revenue to the railroads, the government was making money out of the operation of the roads.

"The Railroad Committee will work with you in all earnestness. There should be no such thing as empty car movement; they should take off some passenger train locomotives to put into freight service; they should appeal to the patriotism of the public and cut down the demurrage time, and generally institute such reforms as to give the greatest possible service to the country.

"The same spirit actuates you that actuates them. You must use much the same methods. You will have to do some things that, no doubt, some will object to. You will have to do some things that will upset, to some extent, I fear, previous long-standing conditions. I myself am not able to see why all the mines should compete with one another. It strikes me that the railroad men and yourselves can meet that situation. I can see where it may be necessary to have some change in the ordinances of some cities with respect to the character of coal used. All these things must be done tentatively, simply as a war or emergency measure.

"The large problem is as to how to secure the greatest output of coal, and to get that output to the consumer. I need not emphasize that problem. Mr. Peabody has talked it over with me, and I can see that he has a larger grasp of that problem than I.

"I hope you will go at this thing in true American fashion, with two fists; with the same determination to solve the difficulties that are besetting the industries of the United States today that the soldier will display when he goes across to the other side to meet the common enemy. You are doing soldier's work. It is not a thing of gratification that you have to be called here. It is, instead, a thing that should be regretted. But then the whole world-wide situation is one that must be regretted.

"We are in this thing because we are determined to win, and we cannot win unless the

industries that depend on you get from you the supply of fuel that is just as necessary to the continuance of their existence as are bread and meat to the continuance of the life of the soldier.

"I thank you for your attention. The Bureau of Mines is, of course, at your disposal. Mr. Manning, the director of the Bureau of Mines, is a member of your committee. Dr. Smith, director of the Geological Survey, who has been carrying on for years the statistical work of the mining industry, is a member of your committee. If there is anything further that we can do for you, we will be glad indeed if you will let us know, so that we may cooperate with you. We want the big business men of the United States to feel that the burden of carrying on this war does not rest merely upon a few government employes, like myself, but rests, in no inconsiderable part, upon those who represent the genius of our economic and industrial life."

### **PARSONS' PATENTS ARE DEDICATED TO THE PEOPLE**

Two patents to Charles L. Parsons, chief chemist of the Bureau of Mines, Department of the Interior, and dedicated for the free use of the people, have been granted for a process for the purifying of uranium compounds and for a process for preparing oxides of uranium. The process for the preparing of uranium oxide is of especial importance at this time owing to the fact that it is now definitely known that the Germans are using uranium less steel in some of their large cannon, and this process will enable pure black oxide of uranium to be obtained for the use of producing ferro-uranium. Experiments in the production of uranium steel itself are now under way. By the use of the processes above mentioned the production of pure oxide of uranium is very much facilitated and cheapened. Also the product is obtained in a much purer form than has ever been acquired heretofore. Uranium oxide so obtained is also valuable for coloring glass, giving to glass the golden yellow color seen in some of the newer forms of automobile headlights. In connection with the uranium work of the bureau considerable quantities of uranium were produced and the methods here referred to permit this to be converted into useful forms for commerce.

### **RELIEF FROM ASSESSMENT WORK PROVIDED IN BILL**

Passage without a dissenting vote of Senator Walsh's bill to relieve from assessment work the holders of mining claims who are called to do military duty makes certain that this bill will become a law. Some members of the House have expressed the view that a law of this kind would result in unfair advantage being taken of it by unscrupulous persons. It is possible that there may be a few votes against the bill when it comes up in the House but its passage is practically certain.

### **GOVERNMENT EXPERTS WELL KNOWN TO MINING MEN**

Dorsey A. Lyon, the superintendent of the Seattle station of the Bureau of Mines, was born in Bureau County, Illinois. His early education was obtained, however, in Las Vegas, New Mexico. His higher education was begun at Durr College, at Springfield, Missouri. He later entered Stanford University, from which he graduated in 1898. He served as a member of the faculty of the University of Washington, as an instructor in geology, from 1898 to 1901. In 1901 and 1902 he took post-graduate work at Harvard.

On finishing his work at Harvard, Mr. Lyon entered the employ of the United States Mining and Smelting Company, in whose employ he continued until 1907. In that year he again entered the faculty of Stanford University and was given charge of geology in the department of geology and mining. He continued in this position until 1911, when he severed his connection with the university to make a study of the use of electricity in the smelting of iron ores. In this connection he made a trip abroad, during which he studied particularly the application of the electric furnaces to metallurgical processes.

Mr. Lyon began consulting work for the Bureau of Mines in July, 1912. In July, 1913, he was promoted to the post of metallurgist. From July, 1914, to 1917, he was in charge of the Salt Lake City station of the Bureau of Mines. When the Seattle station was created he was assigned to the important work which is to be done at that point.

A cut of Mr. Lyon was printed on the front cover of the last issue of THE JOURNAL.

### **Dynamite a Labor Saver**

The world today is in need of men. Not alone for war purposes, but for business and industrial conditions. Millions of mechanics and laborers are required to run the world's machinery. With all the available men of the fighting European countries enlisted in military services and with a draft law in our country, means are being sought whereby work can be done with less men. In industrial work dynamite is being used as a substitute.

Dynamite is extensively used as a labor-saver for digging trenches, canals and ditches. In road building, especially where heavy grades are to be cut down, explosives do the work of many men.

Columns could be written on the employment of explosives for business purposes and its aid to all great constructive work.

Explosives are known to many only as instruments of destruction, hence their great labor-saving qualities are a revelation.

When the great world conflict stops the explosives business will not be materially reduced. The world, in peace, will be in a constructive mood and labor-saving dynamite will be used extensively.



### COAL POOL TO RELIEVE CONGESTION ON RAILROAD

The following is authorized by Fairfax Harrison, President of the Southern Railway System, and Chairman of the War Board of the American Railway Association:

As part of the efforts being made in all directions to increase the capacity of the existing railroad facilities of the country, that they may better meet the present national emergency, arrangements have been made by shippers and railroads whereby all coal for shipment on the Great Lakes through Lake Erie ports will be "pooled." It is expected that this will effect such a saving in the time of freight cars that it will be practically equivalent to adding 52,000 cars to the available freight equipment of the railroads.

The practice heretofore has been for each individual shipper to send coal to some Lake Erie port, and there gradually accumulate enough for a full shipload. In the meantime the cars were held up, and, due to the numerous grades of coal handled in this way, much switching was necessary; under the "pooling" arrangement coal owned by different producers will on arrival at a lake port be put in a common pool, and dispatched to the northwest as fast as steamers are ready to take it. The pooling plan will necessitate a large reduction in the number of grades of coal handled. It is thought that the new arrangement will effect a saving of one and a half days in the time of each car that carries coal to Lake Erie ports.

It is estimated that the railroads will haul 26,000,000 tons of coal to the Lakes for transshipment to the northwest during the 180 days of the navigable season, and that 36,000,000 tons of ore will be moved in the same time from Lake Erie ports to inland furnaces.

### FERTILIZER MEN TELL OF SHORTAGE OF IRON PYRITE

A note of alarm was sounded in Washington last month by representatives of the American Fertilizer Association who met at Washington. The raw materials necessary for the production of fertilizer are declared to be so scarce as to make it essential that all efforts be centered in endeavoring to increase the reserve of pyrite, sulphur and acid phosphate.

The representatives of the Fertilizer Association consulted with George Otis Smith, the director of the United States Geological Survey; H. S. Gale, a Survey geologist; F. G. Cottrell, chief metallurgist of the Bureau of Mines, and A. G. White, the economist of the Bureau of Mines. In addition, representatives of the Bureau of Soils were present at the conference.

The fertilizer men declared that the reserve of pyrite is only enough for three months' consumption; the reserve of sulphur is said

to be only enough for one and a half months' consumption, while the stock of phosphate rock is only sufficient for one month's consumption. Fertilizer companies report that they have on hand a total of 340,000 tons of acid phosphate. This is 50,000 tons less than the small reserve of a year ago. A great deal more acid phosphate will be necessary to insure normal crops this fall, it is declared.

One of the vital needs to remedy this situation, the representatives of the companies declared, is to arrange for the resumption of imports of pyrite from Spain. It is declared that this can be accomplished by having the vessels in the service of the allied governments stop at Huelva, in Spain, and take on cargoes of pyrite on their return voyages to this country. It was pointed out that by increasing the imports of pyrite, other industries besides fertilizer manufacture would be benefited, as there is great need for increasing the output of sulphuric acid.

Apparently there was no concern on the part of the fertilizer manufacturers with regard to the supply of potash. It was very evident at the hearing that their chief anxiety was for adequate supplies of phosphate rock and of pyrite. It was pointed out that considerable difficulties would ensue if an effort were made to substitute pyrite with sulphur. Some question the ability of this country to furnish sulphur in the volume that would be needed in case the pyrite supply should be cut off entirely.

Legislation proposing the purchase of a large reserve of Chilean nitrate was held not to be practicable by the fertilizer representatives.

### BIG DEMAND FOR PHOSPHATE EXPECTED AT END OF WAR

Any statement as to probable developments in the phosphate industry when peace is declared is largely conjecture," says R. W. Stone of the Geological Survey. "So long as the war continues phosphate rock cannot be sent to the large consumer, Germany, and high ocean freight rates greatly restrict and practically stop shipments to other European countries. Furthermore, the demand for sulphuric acid for use in making munitions has raised the prices of acid so high that manufacturers of acid phosphate have been obliged to curtail production. This has reduced the quantity of rock phosphate used by manufacturers of fertilizers and increased the quantity of rock ground for direct application to the soil. It seems reasonable to believe that at the end of the war European nations will want increased quantities of phosphate, for their stores of foodstuffs will be low and intensive cultivation of the soil will be necessary. The demand will again fall largely on the Florida and South Carolina deposits, which are close to the seacoast, and the phosphate industry in those States may then look for marked improvement."

# COAL SPECULATORS SCORED IN REPORT BY THE FEDERAL TRADE COMMISSION

**Unscrupulous Dealers in Coal Will be Exposed by Governmental Agency Which  
Plans to Keep in Close Touch with Situation in Effort to Avoid  
Recurrence of Panic among Consumers**

By direction of the United States Senate as expressed in Resolution No. 217, 64th Congress (Senator Hitchcock), the Federal Trade Commission has been engaged in an investigation of certain phases of the anthracite coal industry, says the report of the Federal Trade Commission to the Senate. It continues:

While that investigation was going forward, a "buying panic" developed in the autumn of 1916, and enormous increases in retail prices resulted. Continuing its general investigation, the Federal Trade Commission turned immediate attention to this condition. The Commission, being about to make its report, finds that at this present moment, the symptoms of the former unwarranted panic are recurring, and that there is now imminent a repetition of the conditions obtaining last winter.

These conditions were intolerable, and the Commission now, therefore, without waiting the transmission of its complete report on past conditions, is moved to call to the attention of the Senate the danger threatening the consumers of anthracite coal and the steps thus far taken based upon the knowledge of the Commission and within the limitations of its power to avert that situation.

During the past week, daily conferences have been held with anthracite operators, with the officials of the United Mine Workers of America, with leading jobbers, and with retailers from various parts of the country.

The Commission is able to say that there now exists no good reason for a panic in the anthracite market, nor for any increase in the present selling prices to consumers. On the contrary, the retail prices generally obtaining today are unwarranted.

The wage increase agreed upon on April 26, 1917, will involve an increased cost of production of between 24 and 30 cents a ton. The price at which leading operators have announced that they will sell, will not exceed this increase. This price is upon anthracite on cars at the mouth of the mine. There is no justification for a larger increase to be passed on to the consumer and these mine prices will not justify present retail prices in many instances.

The new wage scale with the United Mine Workers is a beneficial and steadying factor in the industry. The Commission has received assurances both from responsible anthracite operators and from the miners' representatives that this will be a year of unusually large large production. The mine prices an-

nounced for May reflect approximately the wage increase of last week. The Commission is assured that there is no reason why this price should not continue for the season and be subject to the usual summer discounts, namely, 40 cents per ton in May, 30 cents in June and 20 cents in July, and 10 cents in August.

The Commission believes that the custom normally followed by the majority of retailers or passing the benefit of those discounts on to the consumer, should be followed by the whole trade.

If the public is again so deceived as to indulge in a scramble for coal such as occurred last winter, the favorable situation above reported may be nullified. A demand for four month's coal in the single month of May will be most deplorable. If, on the other hand, purchases are made as usual, there will be no disturbance and small chance for speculators to fleece the public. The best thing that can happen now is for everyone to buy as has been his custom in former years. Such normal buying spreads evenly through the summer, and will insure a steady flow of the production of the mines through the channels of distribution, to build up usual supplies in the hands of consumers, and more especially to build up the normal stock piles of wholesalers and retailers at points far removed from the anthracite region. Many of these points must build up their winter supply during the summer when water transportation is available. Transportation will thereby be relieved of undue burdens and the coal will be steadily distributed during the summer against the needs of the winter.

During the coal panic of the winter of 1916 and 1917, one of the greatest factors in the distressing and intolerable condition, was the unwarranted and indefensible practice of using coal cars for warehouses. Coal was held in cars by speculators while shortages of cars was alleged as a cause of fuel shortage. The Commission calls your attention also to other activities of speculators in anthracite coal who perform no useful service in the distribution of the coal, but who insert themselves as a disturbing and clogging factor upon the industry and whose unearned profits are often much greater than those enjoyed by either miner or operator or honest dealer. These profits, in many instances more than 100 per cent, were paid by the consumer, together with enormous bills for car demurrage.



Within the scope of its powers, this Commission will continue to exert every influence to avert the threatened recurrence of the conditions obtaining in the winter of 1916-1917. To this end the Commission proposes to secure complete current information, keeping close to the conditions of production, distribution, price at the mouth of the mine, price to jobbers, price to retailers and price paid by the public.

The Commission will expose any unscrupulous wholesaler, jobber or retailer who seeks to mislead the public into a belief that exorbitant prices are justifiable or that there is any necessity to join in a frenzied bidding to secure immediate delivery for far-future needs.

The Commission will compile this information at frequent intervals and will ask the co-operation of the patriotic newspapers of the country to the end that the public may be kept constantly informed of what, in justice and reason, it should be expected to pay for anthracite and as to the volume of the production and stocks on hand existing at such times. The Commission has assurances from the anthracite operators that in case of local shortages being called to their attention by the Commission the operators will relieve such local stringency immediately.

The agencies which handle and distribute coal after it leaves the mine and before it comes into the hands of the consumer have also been heard to say to the Commission, through numerous representatives, that they desire and will expect only a fair and reasonable profit for the useful labor and service which they perform.

The fair retail price at any place is the price at the mouth of the mine plus freight, plus the reasonable dealer's profit and cost of local delivery. The May price at the mine of ordinary white ash anthracite, allowing for the 40 cent discount, is approximately as follows:

|                | Gross ton<br>(2240 lbs.) | Net ton<br>(2000 lbs.) |
|----------------|--------------------------|------------------------|
| Egg .....      | \$4.05                   | \$3.61                 |
| Stove .....    | 4.30                     | 3.84                   |
| Chestnut ..... | 4.40                     | 3.93                   |

So then, anthracite coal consumers of the United States may feel assured, first, that there is an adequate supply of coal; second, that that supply will be taken out and prepared for use in a large and constant flow during the summer months; third, that insofar as the power of constant scrutiny and publicity are effective, the Federal Trade Commission will function; fourth, that prices at the mine will be reasonable and such as would not justify the average prices now being paid by consumers.

As to the price of coal to the consumer for the coming season, this leaves two problems for further action, either by the Congress of the United States or by some authority to be designated by Congress. First, the elimination of the element of speculation and the charging of an exorbitant price or the withholding from use of this necessity of life, and,

second, the imperative need of keeping the coal moving from the point of its production to its final destination and of preventing coal cars from being held out of use for the purpose of speculative storage.

The Federal Trade Commission will have the honor to present to you at an early time a further and detailed report and recommendation upon the anthracite coal industry.

Respectfully submitted,

(Signed) Joseph E. Davies,  
William B. Colver,  
John F. Fort,

Commissioners.

Chairman William J. Harris did not sign, being in Chicago, engaged in a hearing on bituminous coal.

### **MANNING POINTS OUT DANGERS FROM UNRESTRICTED TRAFFIC IN HIGH EXPLOSIVES**

"Since the discovery and utilization of gunpowder no war has been conducted without the use of explosives, and just so far as these explosives have been perfected they have been utilized for war purposes. But explosives are equally important for use in times of peace. They are an essential instrument of our modern civilization and their use for utilitarian purposes in time of peace is extending as our knowledge of them improves and increases, and to be most efficiently used in times of peace they must be readily accessible to the users. As a result we find that they are widely distributed in commerce, as other general merchandise is, and, being thereby readily accessible for use, they may be secured by those who intend to misuse them or to abuse the community by their use of them. It is this problem that we now must meet. It is this problem which has been brought out by the War Department, for since explosives are generally accessible for peaceful uses they can be secured by the enemies of our country for the purposes of demolition of our bridges, our ships, our aqueducts, our electric-light plants, and our other public utilities."—Van H. Manning, Director of the Bureau of Mines, before the House Committee on Mines and Mining.

### **COPPER COMMITTEE OF DEFENSE COUNCIL NAMED**

John D. Ryan, of New York, president of the Anaconda Copper Co., has been named as chairman of the sub-committee on copper to serve with the committee on raw materials of the advisory commission of the Council of National Defense. The other members of the committee on copper are Murray Guggenheim, of M. Guggenheim's Sons of New York; R. L. Agassiz, president of the Calumet and Hecla Mining Co., of Boston; Charles McNeil, president of the Utah Copper Co.; James McClean, vice president of the Phelps Dodge Co., and W. A. Clark, president of the United Verde Copper Co.

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## U. S. NOT SUPPLYING TEN PER CENT OF ITS PLATINUM

"The United States at present is not supplying 10 per cent of its platinum requirements, and while there is some assurance that by systematic geological investigation, already planned, new placer deposits that will yield platinum may be found and that by a study of the methods of saving platinum a greater yield from all deposits may be had, yet the issue must be squarely faced that in all probability the domestic supply cannot be made adequate to meet the requirements of normal times.

"An abnormal situation now exists, and it should be considered what steps are to be taken to assure an adequate stock of platinum for the essential uses of the Government. Early in the war England and France commandeered all stocks of platinum for Government use, and all dealings in this metal in those countries have been closely controlled by the respective governments. In the United States it has so far proved almost impossible to collect accurate statistics of supplies or production of this metal. It may prove necessary for the Government to commandeer supplies, but it should be possible to count on the patriotism of domestic platinum dealers and refiners to inform the Government fully of all available reserves of this metal. Fifty per cent or more of the platinum used in the United States has been made into jewelry, the larger part of which is now in private possession. It may be hoped that the whims of fashion will yield to national needs and that purchasers of jewelry will demand gold or silver or a white alloy and so release platinum for its highest use.

"Steps should be taken immediately to ascertain the quantity of platinum in the United States that could be considered as an available supply and to adopt some measures for obtaining an adequate reserve of the metal to meet the Nation's needs for war purposes. The needs of munition makers are at present probably supplied from reserves accumulated during the last two years, but the future demands of the country are inadequately provided for."—James M. Hill in one of the Geological Survey's war bulletins.

## JAMES B. NEALE PENNSYLVANIA'S WEALTHIEST JUSTICE OF PEACE

The unusual compliment of being named as a Justice of the Peace has been paid to James B. Neale, an anthracite operator in Schuylkill County. The Mahanoy City Record says that his designation as Justice in and for Foster Township, by Governor Brumbaugh, places the county in a class by itself, as Mr. Neale is probably the wealthiest Justice in the State.

Mr. Neale is a member of the firm of Thorne, Neale & Company, which operates Buck Run and Darkwater Collieris, and he has done many things for the township. He gave the district a school house, the employes of the company club and bath houses, and he has taken an active interest in township matters not usually displayed by wealthy men. Mr. Neale's interest in welfare matters has caused broad comment and several commendatory articles have appeared in metropolitan papers, quoting the firm's policy as an example to other corporate bodies employing large bodies of men. The newspaper concludes its comment by saying that the law in Foster Township will be administered impartially, equitably and fearlessly during the new official's term of office.

## PARSONS TO DIRECT WORK ON CHEMISTRY OF EXPLOSIVES

As a means of increasing the efficiency of the Bureau of Mines organization it has been ordered that the work of the Explosives Chemical Laboratory be carried on under the direction of Dr. C. L. Parsons, Chief Chemist, instead of being an adjunct to the physical testing of explosives in the mining division as has been the case in the past.

## Erecting Mill

The Kentucky Consolidated Mining Co. of Chicago, is erecting a mill on its property near Sweetwater, Nevada. The ore will be treated by amalgamation and concentration. The order for the equipment has been given to the Denver Quartz Mill & Crusher Co., Denver, Colo.



### GOVERNMENT EXPERTS WELL KNOWN TO MINING MEN



B. O. PICKARD  
Mining Engineer

B. O. Pickard is the metal mining engineer of the Bureau of Mines. Some of the high points in his career are as follows:

Born 1882—Omaha, Nebraska.

Graduated Omaha High School in 1901.

Attended College of Mines of the University of California at Berkeley 1902 to 1905.

Graduated Michigan College of Mines, Houghton, Mich., in spring of 1907 with degrees of Bachelor of Science and Engineer of Mines.

Member Hammer and Tongs—honorary mining engineering frat.

Employed by the Shannon Copner Company at Metcalf, Arizona, as mine sampler in March, 1907. Was promoted rapidly to chief mining engineer and later to superintendent of development properties.

Severed connection with this company in 1910 and established offices in Douglas, Arizona, as examining and consulting mining engineer, with permanent retainment as consulting engineer by the Mines Exploration and Leasing Company of Bisbee, Arizona.

In 1911 moved headquarters to Phoenix, Arizona, where he remained until appointment to the Bureau of Mines as Metal Mining Engineer with headquarters at Pittsburgh, Pa.

During his seven years as a consulting mining engineer he became very familiar with Western United States and Mexican metal mining conditions and has made a specialty of economic geology and mining.

### NEED FOR PLATINUM SPURS SEARCH FOR THE RARE METAL

In order that no effort may be spared to increase the domestic supply of platinum at this time, when it is in such demand for war purposes, the Geological Survey has several geologists studying the formations in which production possibly may be increased or in which the rare metal is likely to be found. Geologists have been assigned to this work who have made a special study of platinum. L. M. Prindell is making a study of the placer district on the border line between California and Oregon. Platinum is found here in connection with gold placer operations. An effort is being made to call the attention of all operators in this district to the fact that platinum is frequently present and to urge them to use every care in detecting it and in providing for its recovery.

It is believed that the California-Oregon area contains richer accumulations of platinum than have been encountered there as yet. It seems probable that platinum in larger quantities will be encountered nearer the heavy basic and serpentinous formations, which doubtless are the sources of the placer deposits.

H. G. Ferguson will have charge of a study of such of the formations as are favorable to the occurrence of platinum in the Appalachian section. J. M. Hill, who has been devoting a considerable portion of his time to platinum for several years will confine practically all of his efforts this summer to the platinum work.

### MECHANICAL ENGINEERS NAME MINING COMMITTEES

At the request of Van H. Manning, director of the Bureau of Mines, the American Society of Mechanical Engineers has named the following committees to cooperate with the bureau:

Subcommittee on Mining Equipment—Frederick K. Copeland, chairman, president Sullivan Machinery Company, 122 S. Michigan avenue, Chicago, Ill.; Frank H. Armstrong, M. E., Penn Iron Mining Company, Republic Iron Company, Vulcan, Michigan; Douglas Bunting, Ch. Engineer, Lehigh and Wilkes-Barre Coal Company, Wilkes-Barre, Pa.

Subcommittee on Fuels—Charles Russ Richards, Prof. M. E., University of Illinois, Urbana, Illinois; Joseph Harrington, advisory combustion engineer, 208 S. La Salle Street, Chicago, Ill.; Charles J. Bacon, Engineering Department, E. I. du Pont de Nemours & Company, Wilmington, Del.

# SMALL PERCENTAGE OF ANTHRACITE SOLD AT PANIC PRICES LAST WINTER

Hearing Before Federal Trade Commission Brings Out Clearly That Few Operators Received Any Increase Over Regular Price—Situation in New York City Described by Representative of Retailers

That a very small percentage of the coal output was sold at panic prices last winter was brought out very clearly at a hearing last month before the Federal Trade Commission. Practically speaking, not a ton of coal was sold by the "companies" at abnormal prices. Some few sales were made by independents at a considerable advance in price. While it was not denied that some few jobbers, middlemen and retailers took advantage of the panic and realized exorbitant profits, it was shown very clearly that this applies to a very limited tonnage. Following this hearing the Federal Trade Commission made its report to the Senate. This report appears on another page of this issue. Owing to the many interesting things discussed at the hearing a detailed account of it is given herewith.

Representatives of the operators, the jobbers and the retailers assembled in Washington at the request of the Federal Trade Commission. Chairman Harris and Commissioners Davies and Fort took marked interest in everything that was said and, despite the numerous demands on their time, spent practically their entire time for the two days at the hearing.

The hearing opened with the Commission requesting that operators give their experience under the Pennsylvania workmen's compensation law. They were asked to point out the relation between the present and the old compensation act. W. J. Richards expressed the opinion that the new law is beneficial. He pointed out the difficulties arising from items which were left over from the old law. It was pointed out by several operators that it will require as much as twenty years to allow the law of averages to operate, so as to establish exact costs under this statute. W. H. Williams, of the Delaware and Hudson Company, showed that his company is in a peculiar situation in that it is incorporated in another state. He stated that the company has pending suits aggregating \$1,500,000.

President Kennedy of one of the districts of the United Mine Workers declared that the new law had bettered things for the wage earners as compared with the previous law, but that it was not up to the standard of some other states.

The commission asked what would be the practical course to take if the State tonnage tax should be found unconstitutional. It was asked how this tax would be refunded and if refunded how it could be made on an equitable basis. Mr. Huber stated that his company

has kept a separate account of the amount of tax. The thought was expressed that the result of the refund of the tax would be an unexpected bonus to the jobber or retailer, who probably would not pass it on to the consumer. It was then suggested that it might be practicable to deduct it from the present price, assuming that more or less the same persons who bought coal last winter will buy coal for this winter and consequently will benefit from a reduction of the present price. Mr. Madeira expressed the opinion that a refund would not benefit the consumer.

Attention was called to allegations that there had been a great loading of costs into the accounts of the coal operators during 1916, which had tended to reduce the apparent profit. It was declared that in some cases new breakers and new power plants had been charged into the cost of the one year, whereas, the equitable procedure would have been to distribute the cost throughout the life of the improvement.

While it was denied by operators that there had been any unfair charging of improvements into the 1916 accounts, some exceptions were cited and justified by the fact that in many cases of second mining it was not possible to prorate the cost owing to the diminished output. It also was asserted that the eight-hour day requires a larger investment and that it is now necessary to charge out a larger amount for depreciation.

Cost of stripping operations are generally apportioned to the amount of coal recovered, it was pointed out. The stripping contractor is not a party to the wage agreement, but it is necessary for him to meet the increase allowed in the mines.

Attention was called to the fact that one of the effects of the eight-hour day is to draw men away from the thinner veins. This is being increased by the shortage of labor and the demand for men at higher wages at the munitions factories. Several operators stated that they do not blame the men for accepting positions in the munitions factories.

In discussing the labor situation President Dempsey, of one of the districts of the United Mine Workers, declared that the mines have been working more steadily and more uniformly during the past year than ever before. His observation is that the shortage of workmen is confined almost entirely to common labor. There is no shortage of the men who cut coal. He declared that efficiency in the anthracite field has been increased very no-



ticeably by the eight-hour day. The decrease in production in April he declared not to be due in any way to the operation of the shorter day. He attributed this more to the car shortage and to the shortage of various laborers. He asserted that there was no idleness throughout the field, except where there has been a shortage of cars.

Mr. Williams declared that the price of anthracite coal when compared carefully with other commodities has not advanced in the same proportion. He made the point that the tendency is to compare the increase per ton of coal with smaller units of other things. If the price per hundred pounds of anthracite coal would be compared with the price per hundred pounds of any other staple, Mr. Williams asserted that it would be found that the advance in anthracite was insignificant as compared with the other staples.

Mr. Williams declared that neither capital nor labor received the advance which caused the Senate to ask for an investigation. Most of the operators take the position that the increase must have taken place in distribution.

In this connection it was pointed out that there is no storage room for coal in New York City and that the supply for the city must be handled from the railroad cars direct to the cellars. Consequently, any shortage of cars immediately is reflected by a scarcity of coal in New York City.

Governor Fort asked this question flatly: "Did the operators do anything to cause the panic among coal consumers?" This was denied vigorously. Mr. Williams declared that it was only on an occasion like the hearing which had been called by the Federal Trade Commission that operators dare to look at each other, much less ask each other a question.

An important bearing on the whole situation was stated by one witness to be the increasing American tendency to live from hand to mouth. This practice is increasing, it was declared, with the tendency away from providence and frugality, and it makes more easily possible a panic such as occurred in 1916. Mr. Williams declared that it is the policy of practically all operators to get a reasonable return on their investment and there is no tendency to take advantage of the fluctuations in prices which take place from time to time.

Governor Fort expressed it as his opinion that coal operators, both bituminous and anthracite, have a difficult problem to solve. He declared that all business men are certain to have a hard time during the war. He sounded a note of warning by calling attention to the fact that some persons believe the war will last ten years. He stated, however, that he did not share this belief, but that no one should take it for granted that the war will be short. With all industries going at war speed, the demands for coal are going to continue to increase. The real trouble last year, he said, was due to the fact, primarily, that industries were moving at high

speed and that they demanded greatly increased supplies of coal. He complimented the patriotic spirit displayed by the coal men and called their attention to the fact that coal is the basis of everything and that much of the effective conduct of the war will depend upon the regularity and continuity of the coal supply. Governor Fort called attention to a letter which he received from a coal man who took exception to the activities of the Federal Trade Commission. The writer stated that the Federal Trade Commission had not tried to interfere when coal was selling for \$1.10, but now when offers come in at figures which permit of recouping former losses resentment was expressed that the Government would not let things go "while the going is good." Governor Fort pointed to this as being the wrong spirit. "Let us stop this business of fluctuating and unreasonable prices," he said, "because the man who makes an average profit comes out best in the end."

Chairman Harris declared that the condition of panic which existed last winter is intolerable and that a ready means of preventing the reoccurrence of such a situation should be found. The difference in the price of coal when it left the mine and when it went into the cellar was so great as to be readily recognizable as unreasonable.

It was pointed out that the average price of prepared sizes did not increase in proportion to the cost of production. It was said that this did not apply to the steam sizes.

The newspapers were blamed by several operators for having played an important part in bringing about the panic. Exceptional instances which were far from being typical were featured in consuming centers and did a great deal, it was alleged, to drive the consumers into a panic.

The second day of the hearing was devoted exclusively to distribution. During the first day the plain inference was that the big companies had not participated in the premium prices at which coal sold during several months of 1916. Governor Fort read a letter from a coal dealer to a woman who had inquired as to prices. The letter was couched in an alarming vein and was calculated to throw the woman and her friends in a state of panic. Mr. Richards pointed out that the radical statements of one dealer could do considerable harm, but that the harm was accentuated greatly by newspapers which pouce upon such an example of poor judgment and scatter it broadcast as typical. Mr. Richards pointed out that if the coal had been adequately distributed there was plenty last winter to go around. There will be plenty this winter, he predicted.

Mr. Clark, representing the New England coal dealers, made a plea for a fixed standard of price during the war. He stated that he represents the majority of New England coal dealers and that they do not believe in \$9.50 coal. Unless prices are fixed, he predicts, there will be many public utility companies

go out of business in New England this winter.

Mr. Rice, representing the retail coal dealers of New York, stated that the "Companies" furnish fifty per cent of the coal consumed in New York City. He stated that it is better to have coal in New York at any price rather than have no coal and that as a result the retailers last winter had to get coal no matter what expense was occasioned. He attributed much of the present trouble to the government's disassociation of the coal carrying railroads from their selling companies. He said that in some cases retailers in New York paid as high as \$12 wholesale for coal last winter, but he declared that the newspapers talked of nothing but \$12 coal, when the truth of the matter is that less than two per cent of the coal sold in New York last winter brought that figure. He explained in some detail how property is too valuable in New York City to use for the storage of coal. He stated that the retailers in New York City are more maligned than any other set of men. He declared there is no justification for the many charges laid at the door of the retailer and that every retailer in New York City is more than anxious to have a searching investigation made of his business in the hope that he may obtain a clean bill of health. He asserted that the New York retailer is glad to make twenty-five cents a ton profit on the domestic sizes and is more than pleased if he receives ten to fifteen cents on steam sizes.

In the event of the fixing of a maximum price by the government, Mr. Rice urged that this price be made on the basis of the man who has the highest costs. He told of one dealer in New York who has twenty-one yards. This dealer doesn't have to haul a single order of coal more than a mile. For this reason he has very low costs and it would not be fair to the average dealer if his costs were taken as a basis. To be fair, Mr. Rice declared, it would be necessary to take as a basis the man having the highest costs. He painted a gloomy picture of the situation surrounding the retail coal business in New York. He declared that only sixty retailers are left out of 200 who flourished a few years ago. He also pointed out how the jobber is necessary to the coal business. The big companies cannot afford to look into the credits and standing of every retailer. He said, however, that some jobbers are parasites on the industry. He referred to that class of jobbers who have offices "in their hat bands" and who are as necessary to the business as "a deck hand on a submerged submarine."

Considerable discussion took place regarding the possible advantages of preferential treatment of coal in the matter of transportation. Mr. Williams held that the blockade was only accentuated by preferential movements. Even Commissioner Davies said that he doubted the effectiveness of such efforts. One of the serious features in this transporta-

tion situation, it was declared, is the fact that the ships on the Great Lakes are refusing to take return cargoes of coal. The demand for iron ore is such that they are rushing back without losing the time necessary to load coal. This is resulting in forcing millions of tons of coal for the Northwest on to the railroads and further congesting the crowded gateway at Chicago.

It was the advice of Mr. Warriner that prices be let alone. A maximum price, he declared, would prove to be no panacea. If an attempt to fix prices should be made it would be necessary to have it applied to all commodities so as to be equitable. Governor Fort stated that he is inclined to agree with that view but asked if it could not be arranged to tide over a very unusual situation. There was little favor for the proposal, however.

Commissioner Davies called attention to the advisability of meeting the situation. He predicted that if it becomes necessary for the government to take over the coal mines that a large portion of them would never return to private ownership. This he pointed out is not good practice in a democracy but that the people are not going to permit a continuance of coal prices out of proportion to the cost at the mine.

Several of those present expressed the opinion that the frank talks which had been had during the hearings would do a great deal to coordinate action so as to prevent a reoccurrence of the deplorable conditions which existed for a time last winter. It was also predicted that production will be enough greater to help to remedy the situation.

Those in attendance at the hearing were: E. R. Brevoort, member of firm F. A. Potts and Company, 143 Liberty St., New York; H. M. Search, Assistant Secretary Anthracite Coal Operators' Association, Bethlehem, Pennsylvania; Alan C. Dodson, president Weston, Dodson Company, Inc., and secretary Anthracite Coal Operators' Association, Bethlehem, Pennsylvania; A. E. Jessup, vice-president and general manager, G. B. Markle Company, Jeddo, Pennsylvania; C. F. Huber, president and general manager, Lehigh and Wilkes-Barre Coal Company, Wilkes-Barre, Pennsylvania; W. A. Clark, president, New England Coal Dealers' Association, Old Southern Building, Boston; M. R. Schenck, treasurer, J. Skidmore's Sons, 9 East 44th St., New York; John Markle, president, G. B. Markle Company, 2 Rector St., New York; E. M. Reynolds, comptroller, Lehigh Coal and Navigation Company, 437 Chestnut St., Philadelphia; Thomas Kennedy, president, United Mine Workers of America, district No. 7, Hazelton, Pennsylvania; James Mathews, president, United Mine Workers of America, district No. 9, Shenandoah, Pennsylvania; Daniel B. Wentz, vice-president, J. L. Wentz Company, Land Title Building, Philadelphia; Arthur F. Rice, commissioner, Retailers of New York City, 90 West St., New York; C.



H. Jacobs, member of fire Whitney & Kemmerer, 304 Gerard Building, Philadelphia; S. D. Warriner, president, Lehigh Coal and Navigation Company, 437 Chestnut St., Philadelphia; Morris Williams, president, Susquehanna Coal Company, Philadelphia; L. A. Tompkin, comptroller, Lehigh Valley Coal Company, 143 Liberty St., New York; W. H. MacEwan, assistant secretary, Philadelphia and Reading Coal and Iron Company, Philadelphia; G. N. Wilson, president, Lehigh Valley Coal Sales Company, New York; S. B. Thorne, president, Thorne, Neale Company, 17 Battery Place, New York; John T. Dempsey, president, United Mine Workers of America, district No. 1, Scranton, Pennsylvania; A. M. Fine, auditor, The Hudson Coal Company and The Delaware and Hudson Company, Scranton, Pennsylvania; W. H. Williams, vice-president, The Hudson Coal Company and the Delaware and Hudson Company, 32 Nassau St., New York; F. M. Chase, vice-president and general manager, Lehigh Valley Coal Company, Wilkes-Barre, Pennsylvania; Edward W. Parker, director, Anthracite Bureau of Information, Wilkes-Barre, Pennsylvania; F. E. Zerbey, general manager, Kingston Coal Company, Wilkes-Barre; John W. Crooks, purchasing agent, Pardee Brothers and Company, Lattimer Mines, Pennsylvania; G. S. Chadwick, Philadelphia and Reading Coal and Iron Company, Pottsville, Pennsylvania; J. F. Birmingham, president, Delaware, Lackawanna and Western Coal Company, 120 Broadway, New York; W. M. Jenney, vice-president and general counsel, Delaware, Lackawanna and Western Railway Company, 90 West St., New York; George J. Eltz, treasurer, Theoford, Eltz Coal Company, New York; John W. Whitely, member of firm Whitney & Kemmerer, 142 Liberty St., New York; W. C. Johnson, Lehigh and Wilkes-Barre Coal Company, Wilkes-Barre; Percy C. Madeira, president, Madeira, Hill and Company, North American Building, Philadelphia; W. A. May, president, The Pennsylvania Coal Company and Hillside Coal and Iron Company, Scranton, Pennsylvania; F. H. Wulenbrock, Philadelphia and Reading Coal and Iron Company, New York.

#### **CARRIERS ARE ALLOWED TO FILE RATE SUPPLEMENTS**

Following requests by the carriers throughout the country to be permitted to file supplements to existing rate schedules, proposing general increases in rates of 15 per cent, except as to a few specified commodities, the Interstate Commerce Commission has recently heard in conference large numbers of representatives of the carriers and shippers respecting the matter. The purpose of these requests is to avoid the expense and delay incident to the full and detailed preparation and republication of all of the existing tariff schedules, substituting in detail

the proposed increased rates for those now in effect.

The Commission deems it to be in the public interest that the question of the propriety and reasonableness of these proposed increases should be reached, considered and disposed of as promptly as may be feasible and practicable, consistent with the ends of justice. Therefore, acting under the discretion with which it is vested by section 6 of the act to regulate commerce, the Commission has issued permissive orders authorizing the filing of rate supplements.

In view of erroneous reports that have been published, it seems proper to state that the Commission has reached no determination, and therefore expresses no views or opinion, upon the question of the reasonableness or propriety of such proposed increases, which, as indicated in the orders referred to, will be subject to protest, suspension, complaint, investigation and correction if in conflict with any provision of the act. Reasonable opportunity will be afforded for the presentation and consideration of protests.

#### **U. S. CAN INCREASE ITS ASBESTOS SUPPLY MARKEDLY**

"With a view to increasing the available supply of asbestos, especially the spinning grades, which are so much in demand, all areas of peridotite and pyroxenite rocks more or less altered to serpentine should be prospected for cross-fiber veins of asbestos in which the fibers are three-fourths of an inch or more in length," says a recent Geological Survey report by J. S. Diller. The content of such fiber necessary to yield a profit may be less than 1 per cent of the whole rock quarried, and in obtaining it a much larger percentage of mill fiber will most probably be taken out.

Although the Arizona chrysotile fiber is excellent for certain purposes and finds a ready sale to those who need it for electric insulation, its mode of occurrence necessitates expensive operation and small production, and it should be mined with especial reference to avoiding waste and obtaining all within reach.

The origin of asbestos, especially that of Arizona, is not well understood, and much field investigation is needed to discover the causes determining its distribution and the best methods of mining so as to utilize as far as possible all the available grades of fiber.

The United States, being the largest manufacturer of asbestos and having only a meager domestic supply, has to depend very largely upon imported asbestos, but fortunately the chief source, which is Canada, is close at hand. Under increased demand the output of the United States is likely to be greatly augmented, although it can hardly be expected ever to supply all the asbestos needed for increasing manufacture.

# MANGANESE MINES RESPOND MEAGERLY TO PRICES THAT ARE HIGH ABOVE NORMAL

## Brazil in Position to Furnish the Entire Needs of United States if it Should Become Impracticable to Continue Importation of Great Alloy Metal from Russia and from India

The review of the trend of production, imports, and prices of manganese ore and alloys during the last three years of extraordinary demands, when several regular sources have been largely eliminated, leads to several conclusions. First, it is reassuring to know that even if Russia and Indian ores are largely eliminated, Brazil can supply the enormous quantity of high-grade ore that has been required. On the other hand, the meager response of domestic manganese mines to prices that are three times normal, though not wholly unsuspected, is a source of apprehension. Some new deposits have been found, but there is no assurance that they are larger than those previously known. There can be little doubt that if conditions demanded the maintenance of the 1916 output of steel and if imports of manganese ore and ferromanganese were shut off, the deposits of manganese ore now developed in the United States could not meet the demands, and much readjustment in the steel industry would be necessary. This is the statement of D. F. Hewett, the manganese specialist of the U. S. Geological Survey. His "war" bulletin continues:

In any industry shortage of material may develop either through actual deficiency of supplies or because it ceases to be profitable to produce the grades of raw material hitherto considered acceptable. In the case of manganese it appears that the United States faces the second situation. The supply of high-grade manganese ore is deficient, but there is reason for expecting that if the lower-grade manganiferous iron ore and materials of similar composition can be more widely utilized, an adequate supply of raw material can be obtained for several years at least. It is not clear what increase in price of manganese alloys would be necessary to bring forth the required supply, but it seems certain that the needs could be met by the combined output of manganiferous iron ore, manganiferous silver ore, and manganiferous zinc residuum.

There can be little doubt that, under necessity, the manganese and manganiferous iron deposits of Virginia, Georgia, Tennessee, and Arkansas can be made with little additional equipment to yield twice or three times the present output for several years. Undoubtedly, however, the deposits of the Cuyuna range, Minn., offer a greater supply in a smaller area, and as a number of mines are reported to be exploring that range in advance of production only small additions to equipment should be necessary to make large tonnages available.

The recent increase in prices of alloy has diverted for the manufacture of spiegeleisen large quantities of manganiferous silver ores that previously had been used only as flux. Mines at Leadville, Colo., and Pioche, Nev., have shipped a large aggregate quantity and will probably continue to ship, but in such districts explorations are rarely carried on greatly in advance of production. The ratios of iron, manganese, and siliceous matter in the manganiferous siderite from which the oxidized ores of Leadville appear to have been formed closely resemble those in other materials that are now smelted to spiegeleisen. Systematic investigation in Pioche, Leadville, and elsewhere may show that these districts contain large quantities of manganiferous siderite which may be smelted to spiegeleisen. Although manganiferous silver ore is being shipped by other districts, such as Tombstone, Ariz., Silver City, N. Mex., and Phillipsburg, Mont., there is no prospect that they are capable of shipping as much as Leadville and Pioche. The most recent information from Eureka, Nev., and Tintic, Utah, does not encourage the hope for production from those districts.

The largest resources of manganiferous materials in the United States are those from which only spiegeleisen may be made by processes now in use. It would be well to inquire whether there is a prospect of making from such materials, by milling methods or preliminary smelting, a product rich enough in manganese to be smelted to ferromanganese. Most of the manganese ore now produced in the United States is subjected to washing and other processes of concentration, and some of the manganiferous silver ores of Tombstone, Ariz., yield by concentration a high-grade manganese ore. According to press reports, experiments are being made with ores from the Cuyuna range, Minn., with the hope of extracting a part of the iron minerals and thereby raising the manganese content of the remainder.

The suggestion has been made recently that it is possible to smelt manganiferous iron ores in such a way that most of the iron is reduced to metal and the manganese thereby concentrated in a slag from which ferromanganese might be smelted. It is possible that some ores might be treated in this manner, but as the silica of the ore would also be concentrated in the slag and the losses of manganese would reach a maximum when it is reduced from material with high silica content, it is doubtful whether such a process could be



used profitably to make ferromanganese from most of the ores now available.

The possibility of using this or similar processes to make ferromanganese from materials not available by present methods must be weighed against the alternative of extending the uses of spiegeleisen to the manufacture of all kinds of steel, rather than to that of steel made by the Bessemer process alone. These questions require investigation by competent metallurgists, but it may serve a purpose to call attention to them. The problem of adequate manganese supply resolves itself into two parts—production, on the one hand, and utilization, on the other. Most manufacturers of steel are aware of the conditions that affect the current supplies of manganese ores and alloys, but it is possible that they have not adequately considered the prospect of utilizing other manganiferous ores. Of course, the need for using these ores will not arise until imports of high-grade ores have been stopped, but it is evident that experiments should be made now and that the steel makers are best equipped to undertake them.

In order to insure the maximum production of ores of all grades the cooperation of competent economic geologists, mining engineers, and owners of manganese deposits is suggested. As the manganese deposits of the United States have not yet been able to supply large quantities of ore in competition with several foreign sources, the operation of most domestic manganese mines has ceased to be profitable, and much of the annual output is derived from brief campaigns of operation by optimistic investors who know little about the business and its risks. The mining of manganese ores therefore does not appear to attract the able engineers and workmen who make a success of mining iron ore and coal in the same or near-by regions. It is not impossible that the production of high-grade manganese ore might be made profitable and be increased three or even six times if the owners of the mines had the benefit of competent technical advice and supervision. It would be worth while to consider the advisability of procuring for the owners of properties more or less developed the cooperation of members of the Geological Survey, the Bureau of Mines, and the American Institute of Mining Engineers. Geologic reconnaissance of a number of new deposits by the Geological Survey and prospecting by individuals may also extend the known occurrences.

#### **CAR SERVICE COMMISSION ADOPTS NEW REGULATIONS**

"In all cases keep the cars moving, and settle differences of opinion afterwards."

Such is the motto the railroads of America, in the interest of the nation, have been asked to follow in the movement of freight.

That motto is the keynote of a new set of regulations governing the handling of freight equipment which has been promulgated by the Commission on Car Service on behalf of

the Special Committee on National Defense of the American Railway Association.

In addition to rules framed to give preference to the movement of coal and iron ore, the rules prescribe among other things, the following:

"Box cars shall be used in the best interests of the requirements of traffic originating on each road. System cars should be used to the fullest extent to meet demands of shipments local to each line, and should also be used for loading off line when foreign equipment is not available. Foreign cars should, as far as practicable, be loaded to, or in the direction of, the home road.

"Surplus empty box cars may be delivered to connections to meet their demands; delivered to the owner if a direct connection; or delivered to the road from which received.

"The Commission on Car Service will undertake to regulate car supply as the exigencies may require, and will issue a bulletin semi-monthly showing location of cars with respect to percentage of ownership, separated as to classes. Roads having on line in excess of 100 per cent ownership of equipment, treating each classification separately, must so regulate their car handling as not to exceed percentage on line as of April 1, 1917, or as may be designated by the Commission on Car Service.

"A railroad may refer to the Commission on Car Service any situation where car efficiency is involved, or may appeal concerning the handling and use of its freight equipment by another railroad. The Commission on Car Service will investigate such cases and render decisions as the facts and conditions may warrant. Its decision in such matters shall be final."

#### **SAFE BLOWERS USUALLY STEAL THEIR EXPLOSIVES**

"If a man knows the chemical business, he could make explosives out of quite a number of things that he could buy in drug stores or grocery stores. If you are referring particularly to the safe blower—if that is what you intend to cover—the safe blower nine times out of ten steals dynamite. He will take that dynamite from the little outlying stores around mines or quarries or railroad-construction work or road-building work. He will steal a case or so of that dynamite and possibly extract the nitroglycerin from the dynamite. He can do that in a number of ways by using a solvent; often by soaking it out with water. He can take the nitroglycerin out from the dynamite, and he will separate that nitroglycerin and put it in a bottle, so that he can utilize it. I will say, without any fear of contradiction, that from 90 to 100 per cent of the safe blowers in this country get their explosives in that way."—C. A. Patterson, of the Du Pont Powder Co., before the House Committee on Mines and Mining.

# WASHINGTON NERVE CENTER OF MINING INDUSTRY AS NATION'S RESOURCES ARE MOBILIZED

Council of National Defense Actively at Work on Great Industrial Problems Which Have to be Solved—Noted Men Selected to Serve on Committees

Since the entry of the United States into the war, Washington has been the nerve center of the mining industry. The Council of National Defense is now organized and actively at work on the gigantic problems which it faces in an effort to coordinate and unify the industrial activities of the nation. The Council of National Defense is headed by the Secretaries of War, Navy, Interior, Agriculture, Commerce and Labor. In immediate charge of its activities is a salaried director. Operating in conjunction with the Council is an advisory commission which serves without pay. The mining industry is most directly interested in the committee on coal production, which is under the direction of F. S. Peabody, and in the committee on raw materials, which is headed by Bernard M. Baruch. The committees and cooperative committees in which the mining industry is interested most are as follows:

Transportation and communication, Daniel Willard. Cooperative committees on: Telegraphs and telephones, T. N. Vail; railroads, Fairfax Harrison; electric railroads, Gen. George H. Harries.

Munitions, Howard E. Coffin. Cooperative committees on: National industrial conference, L. A. Osborne; public utilities, John W. Lied; industrial inventory, H. M. Lakeman; motor transport (unnamed).

Science and research, Dr. Hollis Godfrey. Cooperative committees on: Engineering societies (unnamed); education (unnamed).

Supplies, Julius Rosenwald. Cooperative committees on: Cotton goods, Lincoln Grant; woolen goods, John P. Wood; shoes and leather, J. F. McElwain; knit goods, Lincoln Cromwell.

Raw materials, Bernard M. Baruch. Cooperative committees on: Alcohol, Horatio S. Reubens; aluminum, Arthur V. Davis; asbestos, Thomas F. Manville; brass, Charles F. Brooker; coal tar products, Wm. H. Childs; lumber, R. H. Downman; lead, Clinton H. Crane; mica, L. W. Kingsley; nickel, Ambrose Monell; oil, A. C. Bedford; rubber, H. S. Hotchkiss; steel, Elbert H. Gary; sulphur, Henry Whiton; wool, Jacob F. Brown; zinc, Edgar Palmer.

Labor, Samuel Gompers. Cooperative committees on: Wages and hours, F. Morrison; mediation and conciliation, V. Everit Macy; welfare work, L. A. Coolidge; women in industry, Mrs. Borden Harriman; information and statistics, E. L. Hoffman; press, Grant Hamilton; publicity, Dr. Edward T. Devine; cost of living, S. T. Ballard.

Medicine and surgery, Dr. Franklin H. Martin. Cooperative committees on: General medical board and standardization, Dr. Franklin H. Martin.

The cooperative committees, which are of most interest to the mining industry, are composed as follows:

Zinc, Edgar Palmer, New Jersey Zinc Company, 25 Broad Street, New York; Thomas F. Baker, president American Zinc, Lead and Smelting Company, 120 Broadway, New York; A. P. Cobb, vice-president New Jersey Zinc Corporation, 55 Wall St., New York; Sidney J. Jennings, vice-president United States Smelting, Refining and Mining Company, 120 Broadway, New York; Cornelius F. Kelly, vice-president Anaconda Copper Company, 42 Broadway, New York; N. Bruce MacKelvie, president Butte and Superior Copper Company, 25 Broad Street, New York; Thomas F. Noon, president Illinois Zinc Company, Peru, Ill.; Charles E. Orr, president Bertha A. Mining Company, Webb City, Mo.

Lead, Clinton H. Crane, president St. Joseph Lead Company, 61 Broadway, New York; Fred W. Bradley, president Bunker Hill and Sullivan Mining and Construction Company, San Francisco; Edward Brush, vice-president American Smelting and Refining Company, 120 Broadway, New York; E. J. Cornish, vice-president National Lead Company, 111 Broadway, New York; Harry L. Day, Hercules Mining Company, Burke, Idaho; F. Y. Robertson, vice-president and general manager United States Metals Refining Company, 120 Broadway, New York.

Aluminum, Arthur V. Davis, president Aluminum Company of America, Pittsburgh; E. E. Allyne, president Aluminum Castings Company, Cleveland; Joseph A. Janney, Jr., Morris Building, Philadelphia.

The committee on oil is as follows:

Chairman, A. C. Bedford, president Standard Oil Company, 26 Broadway, New York City; G. S. Davison, president Gulf Refining Company, Frick Building, Pittsburgh, Pa.; E. L. Doheny, president Mexican Petroleum Company, Los Angeles, Cal.; E. C. Lufkin, president Texas Company, Whitehall Building, New York City; John H. Markham, Jr., Daniels Building, Tulsa, Okla.; H. F. Sinclair, president Sinclair Refining Company, Equitable Building, New York City; J. W. Van Dyke, president Atlantic Refining Company, 3144 Passyunk Avenue, Philadelphia, Pennsylvania.



## CURRENT FEDERAL LEGISLATION

Since our last report on current Federal legislation 1,140 bills and 45 resolutions have been introduced in Congress, making a total of 69,990 bills and 151 resolutions. Of these 270 bills were introduced in the Senate and 870 bills in the House.

Of these bills, those which are of special interest to mining men follow:

H. R. 2316, by Mr. Webb, provides for combinations among business organizations engaged in export trade under general direction of the Federal Trade Commission, each business organization so engaged being required to file with the Federal Trade Commission, a statement of its articles of incorporation or contract of association, the location of its offices and the names and addresses of all its officers, stockholders and members. The bill provides that no acts shall be permitted under its provisions which unduly enhance prices within the United States. It further provides that the prohibition against unfair methods of competition contained in the Federal Trade Commission act shall be construed to extend to unfair methods of competition used in export trade against competitors even though the acts are done without the territorial jurisdiction of the United States. Whenever the Federal Trade Commission shall have reason to believe that such association in the United States or elsewhere has done any act which unduly affects prices within the United States, it may recommend a readjustment of the business and upon failure shall refer its findings and recommendations to the Attorney General of the United States for such action thereon as he may deem proper.

H. R. 3665, by Mr. Good, provides that during the continuance of the war with Germany and for one year after the close of said war, the Council of National Defense shall fix the maximum price at which any manufacturer, jobber or retail dealer may sell any article of food, wearing apparel or fuel which has been shipped or delivered for shipment as interstate commerce. The bill provides that the Council of National Defense shall so far as practicable consider the cost of production and marketing, including transportation, together with a reasonable profit thereon. The bill makes it unlawful for any person to sell these articles for any price in excess of the price at which he sold articles of like kind December 1, 1916, and provides that if any person shall deem that the prevailing price December 1, 1916, was too low and did not afford a fair and remunerative return, such person may file with the Council of National Defense an application for permission to increase the price. The bill requires the Attorney General of the United States to defend the Council of National Defense against any suits commenced against it for the annulment of any of its findings. The bill further provides that the Council of National Defense "shall adjust, compromise and settle any and all disputes arising between any employer of labor and his or its employees engaged in the manufacture, transportation or marketing of any article of food, wearing apparel or fuel, including the production of fuel, that has been shipped in interstate commerce or delivered for shipment in interstate commerce, or is produced with the intention of its being a subject of interstate commerce. All persons who are parties to any such dispute, either as employer or employee, shall be bound by the decision of the Council of National Defense in any decision rendered by it, and it shall be unlawful for any person being a party to any such dispute, to do any act or thing in violation of any decision of said Council of National Defense, . . . or that will delay or retard the interstate transportation thereof."

Suits are authorized in the Federal court by any interested party to set aside any decision of the Council of National Defense. Violations of the act are subject to a fine of not to exceed \$5,000, or imprisonment in the penitentiary for not to exceed two years, or both, in the discretion of the court for each offense.

H. R. 3932, by Mr. Foster, is a substitute for H. R. 3633, and prohibits the manufacture, distribution, storage, use and possession, in the time of war, of explosives, except in compliance with the

regulations authorized by this act, and provides regulations for the safe manufacture, distribution, storage, use and possession of same. The bill is intended to be in force during the time of war only and will become inoperative upon a declaration of peace. The bill provides that the President may promulgate by public proclamation such rules and regulations as he may deem necessary covering the manufacture, distribution, storage, use or possession of explosives. This bill has been approved by the committee on mines and mining and now awaits the action of the House of Representatives.

H. R. 3971, amendment to the bill, by Mr. Smith, of Georgia, making appropriation for military and naval establishments on account of war expenses, authorizes the expenditure of \$100,000,000 for the construction or acquisition of freight cars to be used by the railroad companies of the United States under such terms and for such compensation as may be approved by the President and as far as possible under agreements providing for the purchase of such cars by the railroad companies receiving them. The President is authorized to direct the General Manager of the United States Shipping Board or to designate other persons to exercise this power.

H. R. 4425, by Mr. Jones, of Texas, provides for an amendment to the act creating a Federal Trade Commission making it unlawful for any person "to sell or offer for sale any stocks, bonds or other securities in any State or Territory of the United States without first submitting to the Commission a notice of such intention to so offer for sale such stocks, bonds or other securities, together with a report of the business engaged in, showing in detail the amount of capital invested or capital stock issued, the amount paid therefor and the manner and time of the payment of same; the dividends paid; the surplus funds, if any, and the number of stockholders; the funded or floating debts and the interest paid thereon; the cost and value of any property, franchises or other holdings; the number of employees and the salaries paid each; the amount expended and how expended; the earnings and receipts; the operating and other expenses, and the balances of profit and loss for the year preceding the filing of said notice, or for such time as such person, partnership or corporation shall have been engaged in business. If after examination of said report, or together with such other information as may be further required, the commission shall deem that the business to be affected is in a state of solvency and offers a reasonably safe investment for the public, it may, on the payment of a reasonable sum, issue to such person, partnership or corporation a certificate reciting in substance that such person, partnership or corporation therein named has complied with the provisions of this act." A penalty of \$100 for each day's default is prescribed by the act, and it is provided that any agent acting in behalf or operating for such firm before it shall have complied with the provisions of this act shall also be liable to fine of \$100 for each and every violation.

H. R. 4229, by Mr. VanDyke, prohibits the use of stop watch or time measuring devices or systems in the Postal Service.

H. Res. 75, by Mr. Ferris, provides for visitation by not less than five members of the Public Lands Committee of the House of Representatives, to the national parks, forest reserves, water-power sites, oil, coal, potash and potassium areas of the United States, with power to hold hearings, take testimony and to make such observations as to the conditions of said resources as they may deem proper.

H. Res. 84, by Mr. Emerson, provides for an investigation by a committee consisting of four Senators, to be appointed by the Presiding Officer of the United States Senate, and four members of the House of Representatives, to investigate and ascertain:

1. Why has the price of Pocahontas coal increased from 100 to 200 per cent in the past few months?
2. Is the miner getting an increase in wages to justify this increase to the consumer?
3. Is the mine owner charging this great increase



for his product? If so, is he doing it with just cause or not?

4. Do freight rates justify the increase?

5. Are speculators holding coal and are they combining to manipulate the market?

6. What can be done to eliminate this increase in price?

#### SENATE BILLS

S. 2145, by Mr. Poindexter, provides that homestead or mineral entrymen or claimants under any of the public-land laws, who enter the naval or military service, shall be relieved of all requirements of residence, cultivation and development during the time of enlistment and for six months thereafter.

S. 2156, by Mr. Pittman, provides for permits giving the exclusive right to prospect for potassium or sodium deposits upon areas not exceeding 2,560 acres, and that upon a satisfactory showing that valuable deposits of one of these substances has been discovered, the permittee shall be entitled to a patent for 640 acres of the land embraced in the prospecting permit, and that the balances of such land shall be leased upon such terms as shall be prescribed by the Secretary of the Interior, the royalty upon such leased lands, however, not to be less than 2 per cent of the gross value of the output at the point of shipment and such lease to call for an advance rental of 25 cents per acre the first year, not less than 50 cents per acre the second, third and fourth years, and not less than \$1 per acre for each and every year thereafter, such rental to be credited against the royalties as they may accrue for each year covered by the lease. The act further provides that permittees thereunder may lease not exceeding 50 acres of unoccupied nonmineral lands for purposes connected with and necessary to the proper development of any such lease. No person shall be interested directly or indirectly in any acreage in excess of 2,560 acres within any area within 50 miles square in extent, and no lessee shall have more than a tenth interest in any agency engaged in the sale or resale of the products obtained from such lease. Surface rights are to be reserved and 50 per cent of all moneys received shall go to the State in which the leased property is situated, the remaining 50 per cent to go into the reclamation fund.

### ENGLAND FORCED TO RETURN MINERS FROM THE TRENCHES

In view of the legislation now pending in Congress which has for its object the raising of a United States army, the following extract from the monthly review of the United States Bureau of Labor Statistics for April, 1917, and which refers to a recent report on the effect of the war on the coal mining industry in Great Britain, is illuminating. The report referred to shows that the coal production of the United Kingdom in the fiscal year ended July 31, 1916, was nearly 10 per cent less than in the fiscal year 1913 and 1914. The review of the Bureau of Labor goes on to say:

"In order to turn the decrease of output into an increase, it was found necessary, under certain conditions, to arrest the recruiting of miners and to provide for the replacement of those already in the army. At the end of March, 1916, 282,200 had joined the colors, but the replacement numbered 116,900, leaving a net reduction of 14.8 per cent of the labor at the outbreak of the war. On June 16, 1916, the government prohibited all recruiting from miners, and decided, further, that all miners in the ranks of home service units who were unfit for foreign service should be returned to the mines, which would, it was estimated, make available between 15,000 and 16,000 workers and add about 4,000,000 tons to the output.

"A serious factor with which the government has had to cope is the large amount of absenteeism due to avoidable causes, which, if wiped out, would add, the committee estimates, about 14,000,000 tons to the total production. The report notes little encouragement along this line. It is stated, however, that a reduction of nearly 1 per cent in the absenteeism, as compared with the prowar period, represents about 20 per cent on the avoidable absenteeism; that the collieries have worked more days, and that the men who joined the forces were among the young and strong of the miners, the men who have come into the mines not being their equal in point of endurance. An effort is being made to reduce absenteeism by the appointment of 'absentee' committees at the mines, but no tangible results are noted.

"So far as days lost by collieries is concerned, the first quarter of 1916, according to the report, shows up better than any other of the ten preceding quarters. Thus the days lost per week in the first quarter of 1913, 1914 and 1915 were 0.53, 0.40 and 0.41, respectively, while in the first quarter of 1916 the number was 0.29. Holidays are given as the chief cause of lost time, but these, it is stated, have been reduced about 50 per cent as compared with pre-war days."

### NICHOLS HEADS DEFENSE COMMITTEE ON CHEMICALS

The Council of National Defense on May 10 announced the appointment of a subcommittee on chemicals, to serve under the committee on raw materials of the Advisory Commission, of which Bernard M. Baruch is chairman. Dr. William H. Nichols of the General Chemical Company, of New York, is chairman of the new subdivision.

The purpose of the new committee will be to assist the Government departments in their chemical requirements as determined by the war. It has taken offices in the Bureau of Mines in the new building of the Department of the Interior, where it will be in constant touch with the officials who have to do with chemical raw materials essential to the manufacture of munitions.

The subcommittee is divided into four divisions: Acids, fertilizers, alkalis and miscellaneous chemicals. One of the most important functions of the organization will relate to fertilizers for the stimulation of agricultural production.

Besides Dr. Nichols, the subcommittee is composed as follows:

Acids—E. R. Grasselli, of the Grasselli Chemical Company, Cleveland; Henry Howard, Merrimac Chemical Company, Boston.

Fertilizers—Horace Bowker, New York; Charles E. MacDowell, president Armour Fertilizer Company, Chicago.

Alkalis—J. D. Pennock, Solvay Process Company, Syracuse.

Miscellaneous Chemicals—Edward Mallinckrodt, Jr., St. Louis.



# FIXING OF COAL PRICES MAY BE NECESSARY, SAYS FEDERAL TRADE COMMISSION

## Report to Congress Points Out Reasons for Regulating the Distribution of Coal— Need of Better Transportation Arrangements Suggested as One Remedy for Present Situation

Pursuant to a resolution introduced by Congressman Rainey in the Sixty-fourth Congress (H. R. 352), directing an inquiry into the conditions in the production and distribution of bituminous coal, the Federal Trade Commission presents the following report. This report is preliminary and not final:

Of late there has been a marked change in the conditions of bituminous coal production and distribution. The Federal Trade Commission has taken cognizance of these facts. There have been recently held by the commission a series of conferences in Washington and in Chicago. At these conferences there appeared before the commission representatives of the following interests:

(1) Operators engaged in the mining of bituminous coal.

(2) Transportation lines, appearing as large consumers and carriers of bituminous coal originating on their lines.

(3) Representatives of municipal public utilities, manufacturing and other industrial enterprises which are important consumers of bituminous coal.

Each of these three classes has been heard in detail, both orally and by the presentation of such written statements as they desired to make. A large mass of information has thus been gathered. The present report is based on this information, together with that previously obtained in this investigation.

### THE PRESENT SITUATION

There is no scarcity of coal in the ground. There is sufficient coal available in the bituminous coal mines now being operated not only to supply the present demand but also to supply a greatly increased demand. At present, however, there is a shortage of bituminous coal at the points of consumption. In the East the principal use of bituminous coal is in the making of steam for transportation and industrial use; in the Central States and the South, while most of the output is used in making steam, a part goes into domestic consumption. The unprecedented demands for this fuel during the past six months, together with the difficulties of rail and of water transportation (particularly by water to the markets of New England, the Great Lakes region, and along the Ohio River), have not only absorbed the coal as fast as it could be shipped from the mines, but have also led to almost complete exhaustion of the coal stored at tide-

water points and at the docks on the Great Lakes.

In the face of a probably greatly increased demand for bituminous coal on the part of the Government for military purposes, for increased transportation, for the manufacture of munitions of every description, and for many other forms of industry, the necessity of mining and distributing more bituminous coal than ever before, both to supply current needs and to replenish exhausted storage, is obvious. The country faces a serious state of affairs in obtaining a commodity which is basic to practically every form of its military and industrial activities. Several of the other belligerent countries have had to meet this same problem, and, finding their coal supply seriously endangered, they have taken far-reaching governmental action to safeguard it. In England the government took complete control of the coal mines after less radical methods of regulation failed. The French government has drawn up a scheme for dividing France into three coal zones in order to equalize distribution, and the government becomes the sole vender. On May 2, 1917, the Russian provisional government took over all the coal mines of that country with a view to control coal distribution and prices. Soon after the outbreak of the war Germany took measures to centralize the whole coal industry of the empire under government control. The Italian government imports all the coal brought into the country and acts as a clearing house for its distribution.

Recognizing the importance of this problem in the United States and the seriousness of the fuel situation, the Federal Trade Commission is making this preliminary report, based on its investigation thus far, with the thought that its information relating to the causes of this situation and its suggestions as to possible remedies may be of value to the present Congress.

### CAUSES OF THE PRESENT SITUATION

1. *Increased demand.*—The marked increase in demand began to be felt about six months ago. In 1916 the shipments of bituminous coal from the mines amounted to about 509,000,000 tons, or about 66,000,000 tons more than in 1915, when previous records in production had been surpassed. Nevertheless, the demand has recently increased to such an extent that not only the unprecedented output of 1916 has been consumed but stored coal accumulated

from the production of previous years has also been practically exhausted. For example, on the docks of Duluth and Superior there have usually been carried over at the opening of navigation some 3,000,000 tons, but this year when navigation opened the docks were practically empty.

The increased demand has been largely due to industrial expansion and to increased railroad traffic. In many industries plants have run two or even three shifts, while most railroads have transported more freight tonnage than ever before. In some sections of the country, particularly in the Northwest, an exceptionally cold winter led to the consumption of more bituminous coal than usual for heating purposes.

2. *Shifting of markets.*—Much of the increase in demand was concentrated in certain localities. There were transportation difficulties due to unprecedented burdens laid by all classes of freight on both rail and water transportation facilities. All this led to a considerable shift to other sources of supply in the markets usually supplied from certain coal fields. For example, coal mined in western Pennsylvania, eastern Ohio and West Virginia did not reach the markets of the Great Lakes and the lower Ohio in the usual quantities. This was because of increased demand from nearer markets, car shortage, decreased lake transportation facilities, low water for a considerable period on the Ohio River and floods in the West Virginia mining region. Consequently the Indiana-Illinois fields have been drawn on to supply the deficit. Thus the tonnage in commercial shipments (*i. e.*, coal not for use of railroads) sent to Michigan from the mines of the Illinois-Indiana fields is reported to have been over seventeen times as great during the nine months from April to December, 1916, as it was during the entire year preceding.

One of the important results of this shifting of markets was a buyer's panic, due to the uncertainty of consumers with regard to getting coal from their regular sources of supply. This led in many cases to a frantic bidding of buyers against each other, for that proportion of the coal supply (usually known as "spot" or "free" coal) which the mine operators were able to produce and ship in addition to the part of their output sold under contract. The proportion of "free" to "contract" coal has varied widely between different fields and mines, but the usual estimates are that from 70 to 90 per cent of the bituminous coal mined is usually sold under contract. Due to the inability of several of the coal fields to adequately supply their usual markets, and to the great increase in the demand for coal, which had not been foreseen and contracted for by the consumers, the prices of "free" coal have risen enormously in all the markets.

(3). *Inadequate transportation facilities.*—While, as previously pointed out, there is no lack of coal in the ground, or of mines from which it can be obtained, the fact must be borne in mind that few soft coal mines are

equipped to store coal. The coal must be loaded into railroad cars as fast as it comes out of the mine. As a general rule, miners do not go into the mine unless the cars necessary to take care of the day's output are on hand at the mouth of the mine. Cars enough to carry away the coal as fast as it can be mined, are, therefore, a prime necessity. During the past six months from a variety of causes, the railroads have not furnished, or have not been able to furnish cars equal to the productive capacity of the mines. Furthermore, where coal has to be carried part of the way by water, there has been difficulty in getting enough boats.

The principal causes for a lack of adequate rail transportation have been: car shortage, embargoes on the movement of freight cars, lack of sufficient motive power, and, to some extent, abuse by shippers and consignees of reconsignment and demurrage privileges. Car shortage in some cases appears to have been due to lack of sufficient cars suited to carrying coal, in others, to the diversion to use in other industries of cars generally available for the movement of coal and in others to the much longer hauls required, due to the shift of markets from their normal sources of supply, which required more cars than usual to distribute the same tonnage. Lack of terminal facilities adequate to handle the immense volume of freight consigned to certain points resulted in great congestion at those localities. Railroads on whose lines the shipments originated had to place embargoes against shipments consigned to such destinations, until the congestion could be relieved. In some cases there was also a lack of sufficient locomotives to move the coal from the mines to the consumer. Some of the car shortage appears also to have been due to abuses by shippers of reconsignment privileges, and of consignees of demurrage privileges in the unloading of cars at destination. In some instances such reconsignment and demurrage privileges appear to have been used by mine operators and brokers as temporary storage in connection with speculative activities to obtain extortionate prices from coal consumers.

The principal causes for a lack of adequate water transportation have been:—diversion of boats in the coastwise coal trade, to other lines of ocean traffic; diversion of boats in the Lake coal trade to ocean traffic; and the conflict of the demand for iron ore and grain transportation with the demand for coal transportation. This conflict has occurred because of the higher freights paid for eastward bound iron ore and grain transportation than for westward bound coal. The delay incident to loading and unloading coal, and the fact that three of the highly profitable grain or ore cargoes could be transported in the same time in which only two could be carried, if coal were taken westward, has resulted in boats, suitable for carrying coal going westward empty, using water as ballast instead of coal.

4. *Labor conditions.*—Statements made at the Commission's hearing by mine operators from



different coal fields, indicate that in some regions there has been and still is an actual shortage of mining labor. The following reasons are generally ascribed: (1) The wages offered in other industries are often higher than those paid in the mines. (2) The lack of full time employment in coal mines due to insufficient car supply often necessitates shutting down the mines from two to three days in the week, and sometimes running them only part of a working day. Since many of the men are paid on the basis of the tonnage they mine, the resulting enforced idleness cuts down the actual wages received. (3) There has been a considerable emigration of alien miners, who have been called to the colors of the various warring European nations, and there has been little new immigration from any source, to fill their places. Some of the southern mining fields have been seriously hampered by the movement of negro laborers to the north, generally to other industries than coal mining. This migration is probably ended.

*5. Increased costs of production and distribution.*—Considerable information in regard to increases in costs of production and distribution was submitted by coal operators at the Commission's hearings, or has been gathered directly by the Commission's agents. These increased costs, as far as production is concerned, are comprised chiefly in cost of labor. While there has been a great increase in the prices of supplies, the increase in the cost of supplies per ton of coal has been a much less important factor than is generally claimed. In the distribution there has also been some increase in cost, mainly in increased cost of transportation to the point of consumption.

The figures already submitted to the Commission in regard to costs and to prices at the mine, show that most of the present prices now being charged both on "free" coal, and on such few new contracts as the mine operators are entering into, are far in excess of the costs as shown by the operators' books. Many of the operators frankly take the position that they are trying to get for their coal the highest price possible under the present demand, and are refraining, even at prices greatly increased over last year, from contracting their output to the extent of their usual custom. They defend this action by claiming that under the operations of the law of supply and demand they have for many years past been getting little more for their coal than the bare cost of production; that the mining of bituminous coal during that period has been a most unprofitable industry; and that this is their chance to recoup themselves for the losses of several years. Accordingly, they are demanding prices at the mine today, which run from fifty per cent to several hundred per cent over the cost of their output.

As a result of this policy, much of the bituminous coal output has been auctioned off to the highest bidders. This has resulted in great profits to certain operators and in special hardship to municipal public utilities, hospitals and other public and private charitable institutions,

and to domestic consumers, especially in the West and South, where relatively little anthracite is used.

*6. Lack of sufficient storage facilities.*—The most economical way of handling coal is by loading it into cars as it comes from the mine, transporting it to the point of consumption, and delivering it in the same car direct to the retailer or large consumer. At times, there are adequate transportation facilities to keep the coal moving steadily in this way. But the consumption of bituminous coal is largely influenced by seasonal changes, the demand normally being heavy in fall and winter months, and lighter in the spring and summer. This leads, in normal years, to frequent shutting down of mines, because of lack of orders, at a time when there are plenty of coal cars, and conversely to traffic difficulties at other times, largely due to inability to secure enough cars to care for the current demands. The obvious remedy for such a state of affairs is the establishment of storage facilities, preferably near the centers of consumption. But the relatively great expense of storing coal has prohibited any general establishment of adequate storage facilities. Thus it has happened that many times during the past six months, the chief cities of the United States have been faced with a coal shortage which threatened to stop their street cars, cut off their electric light and power and their gas, and shut down the manufacturing industries which support their population.

*7. Speculative activities of some mine operators and brokers.*—As already pointed out, from 70 to 80 per cent of the output of the bituminous coal is sold under contract by the mine operators. It is estimated that the railroads of the country consume about one-third of the total production of bituminous coal. Practically all of the railroad supply, in normal times, is under contract. Of the "free" coal produced by the mines, probably about half is sold by them direct to the consumer. The remainder of the "free" coal, and a small part of the coal sold under contract, reaches the ultimate consumer through the medium of middlemen, such as brokers and retailers. Charges of extortionate prices on the part of mine operators and brokers have been brought to the attention of the Commission. According to some information, various mine operators and brokers, through abuses of the reconsignment and demurrage privileges granted by railroads in order to facilitate the regular distribution of coal, have created or increased local shortages and extorted exorbitant prices from the consumers. These charges are now under investigation by the Commission.

#### SUGGESTED REMEDIES.

The remedies which may be suggested for the present scarcity and high prices of bituminous coal, relate to its production, transportation, and distribution. The most effective remedies deal with the improvement in the distribution of the present facilities for transportation. Many operators asserted at the



hearing before the Commission that such remedies were the only ones necessary. On the other hand, the representatives of the railroads, municipal public utilities, and industrial consumers, while admitting the importance of such improvement, pointed out that there were other conditions which need remedy.

1. *Improvement of transportation facilities.*—At the hearings of the Commission, the fact was brought out that measures are being taken by the Interstate Commerce Commission and by the Council of National Defense which it is hoped will relieve transportation conditions. For railroad carriers, additional regulations are being considered covering the distribution of open-top cars to the coal industry, the expediting of the movement of cars loaded with coal, and the return of the empty cars to mines, prevention of the abuse by speculators of reconsignment and demurrage privileges, and the providing, where necessary, of additional equipment for use in transporting coal, both cars and locomotives, either by acquiring new equipment, or through possible changes in other lines of traffic, such as dispensing with passenger trains which are not absolutely necessary and thereby releasing more locomotives for freight service.

For water carriers, remedies should be sought along the lines of requiring boats, suitable for coal carrying on the Great Lakes, to transport coal westward, instead of going back in ballast for grain and ore cargoes, and in adjusting the rail conditions so that there will be sufficient transportation facilities to carry the coal from the Western Pennsylvania, Eastern Ohio, and West Virginia mines to the loading docks on Lake Erie, for prompt loading of the boats. The limited period that the lakes are open to navigation makes it necessary that the carrying capacity of the boats be kept in continuous use. Early remedial action is necessary because every week of the navigation season is of tremendous importance in preventing shortage of coal in the Northwest next winter.

The principal remedy suggested for conditions in the coastwise water transportation of coal, apart from the building of more boats, is the exemption from military use of tugs and barges absolutely necessary to transport not only the coal, but also the timber needed for mine use.

2. *Improvement of labor conditions.*—It was developed at the hearings on the part of the operators that they anticipated that labor condition in 1917 would permit, if mining operations could be kept steady by a continuous supply of cars, the production of as much coal as that mined in 1916, and some of them stated that with their present force, they could mine an excess of from 15 to 20 per cent over their output in 1916. If this statement is accurate, the operators in the coming year will supply more bituminous coal than in 1916. The recent increases in wages and the better housing conditions at the mines, which are being provided for miners, will, many operators believe, not only hold their present force, but to the

extent to which they would attract additional labor, would bring about an increased output.

It will probably be found necessary to exempt miners from the conscription law, so long as they remain at work in the mines. The experience of Great Britain in this matter should be heeded, and the disastrous results which came from the enlistment of miners avoided. Everything should be done to encourage men employed in the coal mines to stay on their jobs, and to realize that it is their duty, as patriotic citizens, not to leave the mine even to enlist, but to see that they are serving their country best by remaining at their labor to produce the commodity which is absolutely essential to sustain all the forces which must be quickened and employed in the prosecution of the war; that their post of honor is at the mine and not on the firing line.

3. *Establishment of increased storage facilities.*—It is highly desirable that additional storage facilities be provided at points of consumption. Municipal and other public and semi-public utilities and institutions should safeguard themselves, not only against being shut down but also against being forced by their urgent necessities to buy coal at exorbitant prices. The railroads, which consume about one-third of the bituminous coal mined, should increase their storage facilities and avoid the necessity of holding cars loaded with coal for railroad use.

4. *Regulations by governmental authority for the distribution of coal.*—Under war-time conditions it may become the duty of the government of the United States to take steps similar to those found necessary by the belligerent European countries, and not only regulate the distribution of the coal from the mouth of the mine to the ultimate consumer by allotting the quantity of the product which the different classes of consumers shall be allowed to purchase, but also to establish the prices to be paid by different classes of customers. Any prices thus established would probably have to be based on actual costs, with an allowance for a reasonable return on actual investment. In other words, the price of bituminous coal, which is a great public necessity, should be fixed according to the same general principle which has been established in the conduct of public utilities. At a time like the present, excessive profits should not be permitted to be extorted from the public by producers and distributors of any prime necessity of life.

Respectfully submitted,  
WM. J. HARRIS, *Chairman*.  
JOSEPH E. DAVIES.  
JOHN F. FORT.

Signing as to finding of fact,  
WILLIAM B. COLVER.

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George Otis Smith, director of the United States Geological Survey, has been made a member of the National Research Council.



### **MANNING MADE MEMBER OF COOPERATIVE COMMITTEES**

Van H. Manning, director of the Bureau of Mines has been made an ex-officio member of the cooperative committees of the Council of National Defense which have work bearing on mining. In this way Mr. Manning is able to keep in very close touch with everything that is going on in these committees and is in a position to be of great aid in pointing out how his bureau can aid in their work.

It is the intention to confine all activities of the Defense Council to subjects which do not come within the scope of the work of the various government bureaus.

### **Mine Taxation Subject of Work**

The last word on mine taxation in the United States has just been published by the University of Illinois. A work on this subject by Louis E. Young, of the faculty of that institution, goes into the subject very exhaustively. The publication covers 275 pages and is perhaps the most complete single work dealing with mine taxation on a national basis. One of the especially valuable features of the publication is the bibliography which will be found to be very complete. The price of the volume is \$1.50. Prof. Young is a member of the American Mining Congress.

### **COMMITTEE ON TIN SUGGESTED BY MANNING**

Creation of a committee on tin as a part of the Council of National Defense has been suggested by Van H. Manning, director of the Bureau of Mines. The tin situation is being studied by several Government bureaus, and the situation has been found to be far from satisfactory. In fact, the need for the intelligent distribution of tin is sufficient to call for special activity upon the part of the Defense Council, it is believed.

The Department of Commerce is working actively on plans to conserve tin by substituting other classes of containers for all products which can as well be enclosed in fiber or other substitutes for the tin container.

### **Pleased With Memorial Volume**

J. F. Callbreath, Secretary of the American Mining Congress has received the following letter from Van H. Manning, director of the Bureau of Mines:

"I wish to express to you my sincere appreciation of your kindness in sending me the Joseph Austin Holmes Memorial Volume, which has just come with the compliments of the American Mining Congress.

"I shall always treasure this volume, not only because of my long association with Doctor Holmes but also because of my long-standing friendship with the Secretary of the American Mining Congress, the compiler of the volume."

## **Personals**

Will L. Clark, formerly of the United Verde Copper Company, and Mrs. Clark, who have been spending some little time in Washington and New York, have left for Lewistown, Montana. Mr. Clark formerly was a director of the American Mining Congress, and is one of its most active members.

Dr. F. C. Honnold, of Chicago, was in Washington several days last month.

H. S. James, of Kansas City, Mo., is a frequent Washington visitor. He was a recent caller at the Mining Congress offices.

Dr. Henry Mace Payne has been appointed chairman of the membership committee for the American Mining Congress for 1917, and is taking very active steps to make this committee the most successful of any year. He has personally made a trip through the Wyoming Valley, in Pennsylvania, where he has found a good deal of enthusiasm concerning the Mining Congress' work.

Hon. Frank H. Short, of Fresno, Cal., is spending a few weeks in Washington and New York.

H. R. Harriman and Mrs. Harriman, of Seattle, Wash., are at the National Capital for several weeks' stay.

Charles H. Smith, of New York City, formerly vice-president for the State of New York for the American Mining Congress, was a caller at its offices in the Munsey Building, Washington, D. C., last month.

Walter Douglas, president of the American Mining Congress, is now at Bisbee, Ariz., where he will remain for several weeks.

Falcon Joslin, of Alaska, and Seattle, Wash., and Mrs. Joslin were in Washington several days last month.

Vey Holman, State Geologist for the State of Maine, was in Washington last month, when he called upon Secretary Callbreath.

C. M. Moderwell, of Chicago, a director of the American Mining Congress and recently appointed to the Fuel Board, discussed the Congress' affairs with Mr. Callbreath when recently in Washington.

Rush C. Butler, of Chicago, was in Washington several days last month on professional business. Mr. Butler is a prominent Chicago attorney and is a member of the American Mining Congress.

# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## GOVERNMENTAL PRICE FIXING

In these strenuous times there is much public demand for the governmental regulation of prices. Some advocate the fixing of minimum prices in order to stimulate production, and others the fixing of maximum prices in order to protect the public.

Both are wrong in principle and both will be found wrong in practice. No other law than that of supply and demand in a fairly competitive market can ever be relied upon to protect the public.

The vital question of food regulation in the absence of monopolistic control will adjust itself. If speculative control of food supplies is attempted, then the Government should exercise its emergency right to commandeer the controlled supply and fix the price to be paid therefor, giving to the speculator the option of accepting the offer or of presenting his demand to the Court of Claims.

THE MINING CONGRESS JOURNAL does not believe that more drastic laws are necessary and that in the absence of speculative control the price question will adjust itself.

## THE BUSINESS OF GOVERNMENT

The American Mining Congress believes that the business of government is to govern just so much and no more than is necessary to protect its citizens in the rights guaranteed by the Constitution; that it should create and maintain those conditions under which its citizens may create property which it may draw upon to enable it to perform its governmental functions. Whatever fields it

occupies, which are not necessary to the performance of those functions, are fields of danger.

It should protect the humblest of its citizens against the encroachments of all others. If a few citizens by any means obtain so great a part of the wealth of the country as to interfere with the "pursuit of happiness," to which every citizen is entitled, it can and should equalize conditions through the power of taxation.

It may do all of those things which are necessary or convenient for the purposes of government, but it should not go into business in competition with its own citizens.

If a business is a necessary monopoly and a necessity to the public welfare, the Government must decide whether to regulate or to operate. If it decides to operate, it should, by purchase, eliminate those who have interests in such business, but it should not compete in business with its own citizens.

## JUSTICE FIRST TO THE CALIFORNIA OIL CLAIMANTS

The vicious unwisdom of the present day tendency to discourage western development in obedience to the demand of the so-called conservation movement has never been more strikingly illustrated than at the present time, when the present world demand for gasoline is so great and the sources of supply so limited.

A still more startling situation would have menaced the country had this movement acquired its greatest power a few years earlier and before the development of the oil resources of California,



Wyoming and other western points had been undertaken by those whose rights to the benefits of their investments are now being seriously questioned. There are some who would completely confiscate those rights in order to establish a Federal naval oil reserve.

It is not proposed to question the desirability of such reserves, but we insist that rights, guaranteed by our National Constitution and by every principle of honesty and fair dealing, should not be sacrificed to accomplish that purpose. If the United States Government, for any governmental need, wants property which belongs to its citizens, its right under the Constitution to acquire such property is undoubted.

If the Government needs a site for a public building, it purchases that property upon the best terms possible and without resort to its rights of eminent domain, and yet the owners of post-office sites did not sink a drill hole two of three thousand feet into the earth in order to find out whether the land had any value; the owners of such property took no special risk in acquiring it.

The owner of an oil well in California or elsewhere did take enormous risk in proving the value of his property and in consequence his rights are entitled to particular respect. These rights in a contest with an individual claimant would be entitled to a hearing in court; to a judicial determination. In a contest with the Government, the claimant cannot demand a hearing in court; he is bound to accept whatever his Government sees fit to allow.

Because of this anomalous situation it ill becomes those in power to ruthlessly override every plea for justice. The California oil claimants have had their millions of dollars of investment tied up so long that they are now willing to accept a lease upon the properties, which by every precedent should be granted to them in fee.

The American Mining Congress is opposed to a Federal leasing system because it believes with Abraham Lincoln, that the public lands "are an impermanent national possession held in trust for the maturing States." It believes

that the natural resources within the several States should be utilized for the support of those States. It believes that the people of Boston are entitled to the benefit of the Boston harbor; that, while the citizens of other States may have theoretically an interest in the Boston harbor, the property of "all of the people," in order to get any advantage from this theoretical right they must go to Boston harbor in order to use it.

Upon the other hand, if the citizen of Massachusetts deserves to utilize his interest in the water powers of Oregon, the oil of California, or the coal of Wyoming, he must go where those resources exist and take his chances with other citizens in securing the opportunity to develop these resources and to share in the profits or losses which accrue.

Having done so, in accordance with the established rules and the law, he should be protected in the rights which accrue. If a doubt exists as to the legal or technical validity of those rights, that doubt should be construed in favor of him whose risk has demonstrated the value of the property and whose expenditures have brought into existence a product so vital to our nation's present war necessities.

If a leasing system is to be adopted, surely the California oil claimants are entitled to a lease upon the property which their capital has made valuable through development.

The American Mining Congress, notwithstanding its objection to a Federal leasing system, will gladly surrender its opposition rather than to have its Government deal unjustly with any citizen of our common country.

The owner of an oil well in California or elsewhere did take enormous risk in proving the value of his property and in consequence his rights are entitled to particular respect. These rights in a contest with an individual claimant would be entitled to a hearing in court; to a judicial determination. In a contest with the Government, the claimant cannot demand a hearing in court, he is bound to accept whatever his Government sees fit to allow.

Because of this anomalous situation, it ill becomes those in power to ruthlessly override every plea for justice. The California oil claimants entered upon the public domain to prospect for oil under statutes which invited and authorized them to do so, they have spent millions of dollars in the development of what are now valuable oil properties, a part of which have been arbitrarily included within Naval Reserves.

Their rights to the land being disputed, their investments having been tied up so long, and their losses having been so great, that, in order to end the controversy, many are willing to accept leases for land which by every precedent should be granted to them in fee.

The American Mining Congress is opposed to a Federal leasing system because it believes with Abraham Lincoln, that the public lands "are an impermanent national possession held in trust for the maturing States." It believes that the natural resources within the several States should be utilized for the support of those States. It believes that the people of Boston are entitled to the benefit of the Boston harbor; that, while the citizens of other States may have theoretically an interest in the Boston harbor, the property of "all of the people," in order to get any advantage from this theoretical right, they must go to Boston harbor in order to use it.

Upon the other hand, if the citizen of Massachusetts deserves to utilize his interest in the water powers of Oregon, the oil of California, or the coal of Wyoming, he must go to where those resources exist and take his chances with other citizens.

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## THE BURDEN ON GOLD PRODUCTION

At no time in the history of the world has the yellow metal been the cause of more grave concern to economic thinkers and to those charged with the responsibilities of the world's financial problems. At no time have nations felt the necessity of guarding with such severe restrictions their gold chests. At no time in the world history has the production of gold

been conducted under such great handicaps. It is very unusual that general prosperity brings hardship to any particular business, but gold production is the one exception.

The value of gold being fixed every increase in cost of production takes from the profit except where improved methods increase the percentage of saving. For instance: if the cost of labor and supplies and other production expenses amount to \$2.50 per ton and the ore carries value of \$5, a saving of 60 per cent would leave a profit of 50 cents on each ton handled. If the production costs shall be increased to \$3.75 per ton, an increase of 50 per cent, a loss of 75 cents per ton would be entailed unless it became possible by better methods to save a higher percentage of the values. If 80 per cent can be saved a profit of 25 cents per ton would result.

When this illustration is applied to such companies as the Homestake and the Treadwell and other large low-grade operations where the total values of the ore mined are about \$2.50 per ton, the enormous burden of increased operating expenses will be appreciated.

Practically all of the known extensive gold deposits are yielding ore of a gradually decreasing average value. The costs of operation have for years been gradually increasing and during the recent past these rapid increases in operating expenses have been exhausting the profits and in many cases have necessitated the closing down of strictly gold producing properties. There seems to be no possibility that operating expenses can be materially reduced nor that the average ore values will be increased. Assuming this to be true, the future of gold production must depend upon a more complete saving or upon some outside and unusual inducement. Whether such inducement will be provided depends upon whether gold for the nation's reserves is worth more than its intrinsic value in the world's finances.

At the present time the United States is doing a business of many times more than its gold reserves. The banks have on call deposit at least four times as much



as the total amount of money in existence in the country and approximately five times more than the nation's gold reserves. The business of the country is growing so rapidly as to startle the imagination. This will require an ever increasing supply of money. Somewhere there is a limit to the burden of credit which a dollar in gold can safely carry. If we shall exceed that limit, financial disaster will follow the first important financial failure through which public confidence, credit, is substantially impaired.

The panic of 1907 came like a flash of lightning from a clear sky. Business in all lines was never better; all workmen were employed at the highest wages then known; there was no great surplus of supplies in the market. A wild speculation caused the finger of public suspicion to point at the immense structure of credit which rested upon an insufficient base of gold.

To be sure, we now have a more elastic monetary system—a system which may do legally what the banks then did without authority of law. But no system can make it possible for a diminishing gold reserve to continually support an increasing burden of credit. At the time an undue and unusual part of the world's gold supply has come to our shores. The future European conditions will require such a premium on gold as will force large gold exports. At the time the decreasing gold production of this country which must follow present conditions may put gold at such a premium as to stimulate gold production. Would it not be better that a Government bounty upon gold production from low-grade ores shall accomplish this stimulation rather than a premium on gold, or, what means the same thing, a depreciation of our currency?

THE MINING CONGRESS JOURNAL submits this question and believes it worthy of serious consideration.

## WEALTH DISTRIBUTION

### THROUGH WAGES

The greatest problem of statesmanship is the proper distribution of wealth. The method by which this can be done

with greatest benefit to all is through the payment of commensurate wages to the workmen. To accomplish this, employer and employe should work together in harmony. These results should be accomplished without the enormous waste occasioned by strikes and without the bitterness of feeling growing out of contests between interests which should be acting together. The great effort should be for efficiency. When the highest efficiency of production fails to create conditions which do not produce a fair wage and a reasonable profit, an effort should be made to discover and relieve those marketing conditions which absorb too great a share of the price paid by the consumer.

THE MINING CONGRESS JOURNAL believes that the purposes for which strikes are declared should be accomplished by some other method. It recognizes that human selfishness leads to demands by one side or the other for an unjust share of operating proceeds. It will constantly labor to accomplish these purposes in some peaceful and economic way. It will strive for safety and the best conditions for the workman, a fair profit for the operator, a fair price to the consumer and the prevention of waste of our natural resources, for safety, efficiency and conservation.

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## THE UNITED STATES CHAMBER OF COMMERCE AND THE WAR

The action of the United States Chamber of Commerce, purporting to represent the trade and commercial bodies of the United States, in asking the President to name a special publicity commission to give the people the truth and arouse them to a sense of their duty would be amusing if it were not so serious. In this connection it is announced that the National Security League will send 2,000 speakers throughout the country to give the people the truth. Just think, in a country with the best newspaper service in the world, 2,000 speakers must go out to enlighten the people. Ye gods, and what is the truth which is to be given the people? We quote from the statement sent out by the Chamber:

Aside from the question of shortening the war there are life-and-death reasons why the United States should speed preparations for the great conflict. There are possible and even probable contingencies, which might cause the United States to bear the brunt of the fighting on her own shores. These are:

"If Russia should collapse.

"If the British fleet should be overcome.

"If the food situation should bring our allies to their knees.

"If great reversals should be met on the western front.

"If the submarine menace be not checked."

What heights or depths does this august body hope to reach which George Creel cannot attain? Knowing Mr. Creel's capabilities and propensities, we shivered at the announcement that he was to be chairman of the administration's Committee on Public Information, but comforted ourselves with the knowledge that great responsibilities usually make for conservatism. This rule should apply to the United States Chamber of Commerce, but its action in the matter indicates that it does not appreciate its responsibility which should make for conservative action.

What are the facts?

The central powers, entirely prepared, began an offensive campaign, which, after a few months of successes, was halted by the Allies, who began without adequate preparation. After two years during which the Allies, in a large measure, prepared for war, the central powers found themselves unable to advance; unable to maintain a complete defense of their lines; with their sustenance depleted to the minimum of existence; with no hope of getting outside supplies; with defeat certain and imminent; but with one possible avenue of escape, namely, a revolting brutal indiscriminate U-boat warfare against the shipping of the world, of friend and foe alike, in order that by cutting off all supplies the Allies might be brought by immediate starvation to end the war.

Self-preservation, the first law of nature, relentlessly enforced the adoption of the brutal alternative. The adoption of this alternative was sure proof that, from the German standpoint, success or even an honorable peace was hopeless.

If the United States were alone entering a war with Germany and before her three years of devastating warfare, there might then be cause for the wild alarms of the United States Chamber of Commerce. Under present conditions its action seems ludicrous. What do these few gentlemen, who pretend to speak for the business organizations of the country want? The President asked for authority to declare a war. It was promptly granted by Congress. The President asked for a conscription bill. It was passed with unusual promptness. The President asked Congress to provide the unheard of sum of seven billions of dollars. Congress quickly met the request. The public was asked to subscribe for two billions of the Liberty Loan. This allotment was promptly oversubscribed. Ten million men registered for conscription without a disturbance. What more can be wanted?

This war is a grim and serious business. The American people are so considering it and thus far have met every requirement. It requires patriotism and great personal sacrifice. The American people are meeting those requirements most magnificently.

The United States Chamber of Commerce is an organization with inherent possibilities of great public service. It has done some good work; a few such exhibitions of panic stricken inability to comprehend the spirit of the American people will doom its future efforts to failure. The great business public, which it should represent, has a right to demand more mature judgment and more conservative action from those who undertake to speak for this organization and to demand that it shall not misrepresent the judgment and genius of the American people.

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#### CHICAGO MUST GET ALONG ON LESS SMOKELESS COAL

Chicago will receive more anthracite this winter than last but will have to economize on its consumption of smokeless coal during the war. This was the information imparted by the Committee on Coal Production to representatives of Chicago retailers recently.



# COAL PRICE FIXING PLAN PUT INTO EFFECT AT HISTORY-MAKING CONFERENCE

Operators Agree with High Government Agents on Prices That Will Save American Consumers no Less than \$100,000,000 during Remaining Six Months of 1917—Secretary Baker Objects to Arrangement

While the action of Newton D. Baker, Secretary of War, in finding fault with the results obtained at the coal price fixing conference held in Washington, June 26 to 28, the plans formulated at that conference will be carried out nevertheless, it is believed. At the conference a schedule of maximum prices was agreed upon and price-fixing committees were selected to act in every coal district in the United States. This action will save the American consumer not less than \$100,000,000 during the remaining six months of 1917, according to an estimate made by George Otis Smith, the Director of the United States Geological Survey. The conference arranged for the formation of a national association of coal producers.

More than 400 coal operators were in attendance and practically every coal-producing district in the United States was represented. Each session was characterized by unusual enthusiasm. The coal operators frequently have been accused of being dollar patriots, but anyone who followed the meetings of the conference saw ample evidence that their chief desire is to help Uncle Sam win the war, regardless of how their personal fortunes may be affected.

Following the drastic report of the Federal Trade Commission, which proposed the pooling of the coal mining and transportation industries, Francis S. Peabody, the chairman of the committee on coal production, saw that quick action must be taken if the government operation of coal mines did not result. He expressed his fear in the following words:

"I want to take this opportunity of saying to the coal men that unless some regulation is made as to the present high price of coal by the coal men themselves, the government is going to step in and do it for them. It is not pleasant for me to say this, but I know what is going to be done. It is much better that we should get together willingly, confer together and confer with the broad-minded men on the Federal Trade Commission and discuss this with our cards on the table, than for some men to be given the authority to tell us the price for which we are going to sell coal, or if it comes to the worst, for some government official to take charge of our mines. I know they will do it if we do not do something ourselves."

In order to see if the industry itself, in co-operation with the Secretary of the Interior and the Federal Trade Commission, could not

insure a lower price of coal and take steps to increase, even further, the volume of production, Mr. Peabody called upon the operators in each producing district to send a representative delegation to Washington armed with figures showing average selling prices in each district for the previous eighteen months, classified by months and as to classes of customers.

The response to the invitation was general, in fact, it brought together one of the most notable gatherings of coal operators in the history of the industry. Even Mr. Peabody himself was surprised at the number who responded. In opening the conference he predicted it would be a historic meeting. He did not foresee, however, that the conference was destined to cause the most serious disagreement that has ever taken place in President Wilson's cabinet. At this time—July 2—it is believed that the President himself will be called upon to decide whether Secretary Lane, Mr. Peabody and Governor John F. Fort, the latter of the Federal Trade Commission, did right in agreeing with the operators on tentative prices which will save the American consumer \$100,000,000 in the next six months; or, whether Secretary Baker is justified in making public views which well might have destroyed the constructive work of the conference had the matter been in the hands of less resolute men. Secretary Baker's letter, which is addressed to the director of the Council of National Defense, is quoted in full as follows:

"My attention has been called through the newspapers to the action reported to have been taken at Washington, D. C., during the past week by the so-called Committee on Coal Production of the Council of National Defense, in cooperation with certain coal producers, and representatives of coal mining enterprises, with regard to the prices of bituminous and anthracite coal.

"The facts seem to be that the Coal Production Committee invited to Washington various coal operators and arranged conferences between them, members of the Coal Production Committee and members of the Federal Trade Commission, leading to the adoption of resolutions in favor of an early and accurate determination of the costs involved in the production of bituminous and anthracite coal, as a basis for some future action by some official agency of the government in fixing fair and just prices for these products, should any such agency be given

power to do so. Pending such an ascertainment of costs this meeting seems to have adopted a resolution whereby the operators present agreed to sell bituminous coal at a price not higher than \$3 per ton, and that this obligation should remain in force until some such action had been taken by an authorized governmental agency.

"The color which has been given to this meeting and this resolution in the newspapers may well mislead the public into believing that the Council of National Defense has either undertaken itself to fix the price of coal, or to sanction its being fixed by the Coal Production Committee, or that committee in conjunction with the coal operators. I, therefore, as president of the Council of National Defense, write this to say that the Council of National Defense has no legal power, and claims no legal power, either to fix the price of coal or to fix a maximum price for coal, or any other product. The Coal Production Committee is a subordinate committee of the Council of National Defense, purely advisory in its character, formed for the purpose of advising the Council as to steps which might be recommended leading to a stimulation of production and distribution of coal. No power has been even attempted to be delegated to it to consider or deal with the question of price, and any action taken by that committee, or sanctioned by that committee dealing with price, either fixed or maximum, for coal is clearly beyond the legal power of the Coal Production Committee and of the Council of National Defense, from which the committee derives whatever authority it has.

"As you are aware, the Federal Trade Commission has been directed by the President to ascertain for his information the costs involved in coal production. I am to some extent familiar with the progress made by the Commission. The information I have from that and other sources, I think, justified me in believing that the price of \$3 suggested, or agreed on, as a maximum, is an exorbitant, unjust and oppressive price.

"The fact that these conferences were attended by members of the Federal Trade Commission and by members of the Council of National Defense, of course, adds nothing to their legal powers, and I am sure that none of my associates in the Council will dissent from the view I have herein expressed, both on the limitation upon the powers of the Council and the Coal Production Committee, and the effect of the action alleged to have been taken.

"I write this for the information of the Coal Production Committee, and for the guidance of all other subcommittees of the Council."

At this writing no defense of his position has been made by Secretary Lane, upon whom the chief reflection of the letter is cast, or by Mr. Peabody or Governor Fort. When the prices had been agreed upon, after much discussion among the operators, they were

adopted at a closed session, at which Secretary Lane and Mr. Peabody were present. Mr. Lane sat at the table with Mr. Peabody and read off the figures to a room full of operators as Mr. Peabody checked them. That the whole procedure met the approval of Secretary Lane is shown conclusively by the following letter sent by Mr. Lane to Chairman Peabody at the close of the conference:

"I have just learned of the action of the coal operators, and I wish to express my appreciation of the generous, prompt and patriotic manner in which they have acted. They have dealt with the situation in the way that I had hoped they would, as large men dealing with a large question. They manifestly see that this is no time in which to consider primarily the opportunities which the war gives for personal aggrandizement. We must gain for each by gaining for all. The country is in a mood for sacrifice. It is intent upon the success of the war and is willing to do everything needed to give insurance to the world against a repetition of this awful condition.

"Will you not be good enough to express to the coal men my appreciation of the spirit they have shown in determining that their prices shall be reduced so that the industries of the country may not feel hampered, and the people may not feel that their spirit is broken down by the thought that this is to be a war for individual advantage instead of self-protection. I felt from the moment of my talk to them that no body of men more truly represented the high purpose to yield personal desire for general good than did they. Now I trust that we shall immediately put into concrete form the spirit of your resolution."

The present prices and the reductions agreed upon are as follows:

Present prices on bituminous coal mined in Pennsylvania have ranged from \$4.75 to \$6. Under the ruling the price is reduced to \$3 for mine run and \$3.50 for domestic lump, egg and nut.

The present range of prices in West Virginia is from \$4.50 to \$6; price reduced to \$3 for mine run and \$3.50 for domestic lump, egg and nut.

The range of prices for Ohio coal has been from \$4.50 to \$5; prices reduced to: No. 8 district, the thick vein Hocking and Cambridge districts, \$3 for mine run and \$3.50 for domestic lump, egg and nut; thin vein Hocking, Pomeroy, Crooksville, Coshocton, Columbiana County, Tuscarawas County, Amsterdam-Bergholz district, \$3.25 for mine run and \$3.50 for domestic lump, egg and nut; the Massillon and Palmyra districts and Jackson County, \$3.50 for all grades of coal.

The prevailing prices in Alabama have been \$5.50 to \$5.75; prices reduced to: Cahaba and Black Creek, \$4; Pratt, Jaeger and Corona, \$3.50; Big Seam, \$3 for all grades.

The prevailing prices for coal mined in Maryland have been from \$5.75 to \$6; reduced prices will be \$3 for mine run and



\$3.50 for domestic lump, egg and nut. The prevailing prices on coal mined in Virginia have been \$4.50 to \$5; reduced price, \$3 for mine run and \$3.50 for lump, egg and nut.

The prevailing prices on coal mined in Kentucky have been from \$4 to \$4.50; reduced price, \$3 for mine run and \$3.50 for the domestic sizes.

The prevailing prices on coal mined in Illinois and Indiana have been from \$3.50 to \$4; reduced price, \$2.75 for mine run and steam sizes and \$3.50 for screened domestic sizes. Add 50 cents for the long wall district of Northern Illinois, Assumption and Murphysboro.

The prevailing prices on coal mined in Tennessee have been from \$4.50 to \$5; reduced price, \$3.50 for all sizes.

Summing up the saving which will be made by the price-fixing agreement, Dr. George Otis Smith, director of the United States Geological Survey, said:

"The coal producers have blazed a way for cooperative effort between representatives of industries and representatives of the government looking to unity in effectual public service. The maximum prices fixed at the conference mean a saving to the American consumer of no less than \$100,000,000 for the remaining six months of 1917. Based on the percentage of spot coal in the different states and the average difference between last week's prices, as published by Coal Age, amended by reports of actual sales as stated by operators present and on the Survey's estimates of May production, it can be calculated that the reduction in price by the operators would have amounted to \$15,000,000 had the agreement been in effect during the month of May. There was a larger gain to the consumer in view of the fact that the stabilization of prices is assured. The small consumer now knows on government authority the price paid for coal at the mine.

"This conference can be regarded as the fair measure of the coal industry's cooperation at this time of national need. Another conclusion that can be drawn from the conference is that a real leader has arisen among the coal producers in the person of Francis S. Peabody."

The resolution adopted by the conference with regard to price fixing was as follows:

*"Be it Resolved*, That it is the sense of this meeting that a committee of seven for each coal producing State and an additional committee of seven appointed by the representatives of the anthracite industry be appointed by the representative of each State now attending this convention, to confer with the Secretary of the Interior, the Federal Trade Commission and the Committee on Coal Production of the Council of National Defense, to the end that production be stimulated and plans be perfected to provide adequate means of distribution, and, further, that these committees report forthwith to the Secretary of

the Interior, the Federal Trade Commission and the Committee on Coal Production to fix Council of National Defense costs of and conditions surrounding the production and distribution of coal in each district, and that these committees are authorized, in their discretion, to give assent to such maximum prices for coal f. o. b. cars at mines in the various districts as may be named by the Secretary of the Interior, the Federal Trade Commission and the Committee on Coal Production of the Council of National Defense."

Then later this resolution was adopted:

"This convention by resolution heretofore adopted, having requested the Secretary of the Interior, the Federal Trade Commission and the Committee on Coal Production to fix a fair and reasonable price at which the several operators in the several coal districts of the United States shall sell coal, do hereby further authorize said government representatives, so named in said resolution, to forthwith issue a statement fixing a tentative maximum price which, in their judgment, is fair and reasonable as applied to the several coal districts, at which coal shall be sold from and after the first day of July next and until the accurate costs have been ascertained and a fair and reasonable price based thereon fixed by said government agencies designated under said resolution. To this end, therefore, be it

*"Resolved*, That the several States, here represented, do present to the chairman of this convention a suggestion, for use by said agencies in fixing the price which the several interests here represented feel should be the fair and reasonable price to be so tentatively fixed by the said agencies."

In order to carry out these resolutions, the following price-fixing committees were named:

Alabama—M. W. Bush (chairman), Birmingham, Ala.; H. T. De Bardleben, Birmingham, Ala.; W. C. Adams, Birmingham, Ala.; S. L. Yerkes, Birmingham, Ala.; W. E. Henley, Birmingham, Ala.; Jas. Bonnyman, Birmingham, Ala.; B. F. Roden, Marvel, Ala.

Colorado—D. W. Brown, Denver, Colo.; A. M. Perry, Denver, Colo.; C. L. Baum, Denver, Colo.; S. S. Murphy, Denver, Colo.; G. F. Bartlett, Denver, Colo.; J. Chilberg, Denver, Colo.; H. F. Nash, Denver, Colo.

Illinois—Geo. B. Harrington, Chicago, Ill.; W. J. Spencer, Canton, Ill.; H. C. Adams, Chicago, Ill.; Thos. T. Brewster, St. Louis, Mo.; D. W. Buchanan, Chicago, Ill.; H. H. Taylor, Chicago, Ill.; F. C. Honnold, Chicago, Ill.

Indiana—A. M. Ogle, Terre Haute, Ind.; J. F. Dering, Chicago, Ill.; W. S. Bogle, Chicago, Ill.; W. J. Freeman, Terre Haute, Ind.; M. L. Gould, Indianapolis, Ind.; H. A. Huskey, Chicago, Ill.; P. H. Penna, Terre Haute, Ind.

Kentucky—E. S. Helburn, Middlesboro, Ky.; Jno. J. Coyle, Curlew, Ky.; Eugene McAuliffe, Paducah, Ky.; Alex. Bonnyman,

(Continued on page 253.)

# PRODUCTION AND DISTRIBUTION OF COAL UNDER FEDERAL SUPERVISION RECOMMENDED

Federal Trade Commission Suggests Drastic Action in Report Made Congress—  
Pooling of Mining and Transportation Interests Held to be Necessary—  
Chairman Harris in Dissenting Opinion Declares Plan Impracticable

## Chairman Harris Dissents

"I concur as to the findings of fact in the report, and also in the recommendation that the production and distribution of coal and coke be conducted through a pool in the hands of a Government agency.

"I concur with the view that even the above would be ineffective unless Government control extended over all means of transportation of coal and coke; but I can not concur with the view that this should be brought about by pooling all transportation agencies in the United States, both rail and water, on Government account, 'the owning corporations being paid a just and fair compensation which would cover normal net profit, upkeep and betterments.' The adjustments of claims for 'upkeep and betterments,' besides compensation for the use of the property during the war, would be so difficult and such a tremendous task that this plan should be adopted only as a last resort; and before it is given a trial I recommend that during the war the President be authorized to order rail and water transportation agencies to give preference to shipment of coal, coke and other commodities in the order of their importance to the public welfare.

Under the Act of Congress approved August 29, 1916;

The President, in time of war, is empowered, through the Secretary of War, to take possession and assume control of any system or systems of transportation, or any part thereof, and to utilize the same, to the exclusion as far as may be necessary of all other traffic thereon, for the transfer or transportation of troops, war material and equipment, or for such other purposes connected with the emergency as may be needful or desirable.

WM. J. HARRIS,  
*Chairman.*

What is regarded as the most drastic step toward governing operation of industries, essential to the conduct of the war is the recent report of the Federal Trade Commission to Congress on the coal situation. The conclusions of the report follow:

The Commission recommends:

First: That the production and distribution of coal and coke be conducted through a pool in the hands of a Government agency; that the producers of various grades of fuel be paid their full cost of production plus a uniform profit per ton (with due allowance for quality of product and efficiency of service); and,

Second: That the transportation agencies of

the United States, both rail and water, be similarly pooled and operated on Government account, under the direction of the President, and that all such means of transportation be operated as a unit, the owning corporations being paid a just and fair compensation which would cover normal net profit, upkeep and betterments.

Faulty rail and water transportation and conditions in the bituminous industry and in the production, control, distribution, and use of coke have been such that much of the gain which should have been secured by the efforts of the Commission, aided by the intelligent and willing cooperation of a great majority of the interests engaged in the production and distribution of anthracite coal, has been lost—this for the reason that though the anthracite market has been filled with a supply which should be adequate for its normal use, the acute shortage of supply in bituminous and in coke, together with faulty distribution and speculation, have driven bituminous and coke prices up to a point which has put anthracite into competition with the other two forms of fuel.

The close supervision of anthracite thus fails of a remedy so long as bituminous runs wild, and the Commission's plan as to anthracite can not be extended over the bituminous industry because of the wide field and the great variation in conditions. The Commission is nevertheless continuing its efforts and will continue them vigorously pending the solution of the whole fuel problem by Congress.

Whatever measure of success has marked the efforts of the Commission with relation to anthracite coal has been largely because the car supply has been adequate by reason of the close corporate relation between rail transportation and anthracite production.

Quite the contrary condition exists with relation to bituminous and rail transportation and with relation to water transportation as to both kinds of coal.

The production of bituminous coal for the first two months of the coal year of 1917 (April and May) has shown a large increase, but not nearly so large as the increase in industrial consumption and not nearly so large as the possible and economical output of mines already opened and in partial operation.

The present production of bituminous coal, the country over, is about 40 per cent short of the possible maximum, and this limitation is solely to be charged, as to primary cause, to faulty rail transportation. The present demand for coal is unprecedented, but the mines now open are capable of filling this demand if adequate car supply is furnished.



It is a fact in the bituminous industry that the capacity of a mine for production and the capacity of labor is limited absolutely by the supply from day to day of coal cars for the moving of the product. Thus we have found that, with the market at unheard of prices, labor is often standing idle at the mines and production is limited as compared with the possible productive capacity.

We find that mine labor is being disorganized by reason of irregular employment and forced idleness, and that in some fields bituminous mines are working only three or four days a week and that willing labor and willing operators are standing idle half the time.

In other fields where there is now a more nearly adequate car supply the irregularity of car supply in months past has so disorganized and discouraged labor that these mines are not now nearly at full capacity of production. The irregularity and uncertainty of employment has caused the miners to be tempted to leave the mines and go into other employment, and, having left, it is difficult to bring them back.

The Commission believes that there are enough coal cars in the country but that there are not enough coal cars delivered to the mines, and that, an inadequate supply having been delivered to the mines and loaded, these cars are not moved to the point of consumption either with the greatest of expedition nor are they promptly discharged upon their arrival at their destination.

The Commission has much testimony of widespread abuse in the use of coal cars by speculators for the storage of coal for speculative purposes, and that the practice of reconsignment is wasteful and a cause of delay and market manipulation.

The Commission finds that coal is not sent to the point of consumption by the most direct route, and that coal cars are being used for transportation of many other sorts of products.

The undue price at which coal can be speculatively sold has resulted in the opening up of temporary and inefficient bituminous mines, called in the industry "snowbirds" or "wagon mines." These temporary and uneconomical mines now secure part of the inadequate number of cars allotted by the railroads to the coal industry. They have none of the usual loading facilities, and the cars are often held at such mines days in the process of loading when a properly equipped mine could load them in a few minutes. The operation of such mines curtails production and is an economic waste at this time.

**The Commission believes that the coal industry is paralyzing the industries of the country and that the coal industry itself is paralyzed by the failure of transportation.**

The coal problem cannot be worked out so long as the railroads are permitted to divide and allot traffic; to lay embargoes without regard to their immediate effect upon industry or upon the systematic distribution of coal; to give priority to the movement of high-freight rate commodities, and to use the device of "long haul."

During the spring and summer months there should be building up in those parts of the country most remote from the coal-producing States stocks of fuel in the hands of industrial consumers, in the hands of State institutions, of public-service corporations and domestic consumers. This storage is not now taking place, but it must be made during what remains of the summer unless the country is to face, next winter, a most serious and, unless immediately corrected, an irreparable situation.

Whatever remedy may be applied, it should be applied as immediately as possible, for time is passing and no human power can supply the factor of time lost. Time is necessary to build up the stores of fuel in distant points, and that storage should begin without the unnecessary loss of an hour.

On the great lakes it was the custom for ships which carried grain and ore down the lakes to carry cargoes of coal up to the Northwest. During the summer of 1916 many ships which brought down ore and wheat went up the lakes in water ballast, taking no coal. Thus they made three round trips earning high rates on freight one way during the same time that would have been consumed in making two round trips carrying cargoes both ways. This practice was pronounced in the late summer and autumn of 1916, and the result was so serious that when navigation opened this spring the Northwest was facing an actual coal famine. This evil condition has already begun this year, and if persisted in the coal famine which threatened that part of the country in the winter of 1916-1917 will be an actual coal famine in the winter of 1917-1918.

The serious conditions with respect to bituminous coal are unnecessarily curtailed production and a wildly fluctuating market in which speculation feeds upon panic.

The serious aspect as to the country at large is the immediate and intolerable hardship laid upon industry and transferred in large part to the public in increased prices and the future hardship which will fall upon the domestic consumers next winter.

Our predecessors in this world war have had to solve the fuel problem which lies at the base of every military and industrial activity. They have tried various experiments and their failures and successes may well guide us in our search for a solution. In England the government took complete control of the coal mines after less radical methods of regulation failed. The French government has divided France into three coal zones in order to equalize distribution, and the government becomes the sole vender. On May 2, 1917, the Russian provisional government took over all the coal mines of that country with a view to control coal distribution and prices. Soon after the outbreak of the war Germany took measures to still further centralize and control the whole coal industry of the empire under government administration. The Italian government imports all the coal brought into the country and acts as a clearing house for its distribution.



All the nations at war have relieved coal miners from military duty, urging that their greatest service to the State can be performed by remaining at their regular employment. Already, in this country the ranks of the miners are being seriously depleted by enlistment.

If a uniform price were fixed, many mines will be shut down unless the price is high enough to make the highest cost mine profitable. Such a price, in operation, might be found unfair as to the public and especially as to the railroads. No remedy will be effective that does not include constant employment to labor and at fair wages; maximum production of all equipped mines; fair profits to all mine owners; and prompt, equitable, and economical distribution to all consumers, both domestic and industrial.

If inefficient mines are closed, so releasing miners to fill the gaps in the ranks of the fully equipped collieries, this shortage can be repaired. It should not be permitted again to become a serious menace to maximum production.

It would seem that steady employment, fair compensation to labor and capital, equitable distribution and stable prices could be secured by pooling all coal and coke production in the hands of the Government.

If the producer at each mine were paid his full cost of production with allowance for depletion, maintenance, upkeep and all the usual items, and to this were added a fixed and uniform net profit per ton, with due regard to quality, the coal thus produced at widely varying costs, if pooled, could be sold through the Government at an average and uniform price, quality considered, which would be entirely tolerable to the consuming public, and a price much lower than could be fixed if an effort were made to fix a uniform price to the producer.

#### **POOLING OF ANTHRACITE AT TIDEWATER BEING CONSIDERED**

With regard to the pooling of anthracite coal Daniel B. Wentz, of the Committee on Coal Production, makes the following statement:

"Four presidents of the anthracite railroads have given some consideration to the pooling of anthracite coal at tidewater and have written reports, which, I understand, have been submitted to the Federal Trade Commission. I saw the report Friday. In substance, they call attention to the fact that anthracite coal is being pooled at tidewater now because of the fact that the railroads own their terminals and most of the coals going over them are mined by the important anthracite companies. The only coal that has not substantially been pooled is the small amount going into New England to tidewater points produced by the individuals, and steps have already been taken to bring about a borrowing and loan account between the individuals. That is being pressed and will be probably consummated at an early date."

#### **THINKS NO INCREASE WILL COME FROM LONGER WORKING HOURS**

Anent the suggestion to increase the number of hours from 8 to 9 per day in the anthracite coal mines, the Department of Labor has prepared a table, showing the relative productions in this industry during the calendar years 1915 and 1916. Concerning it the Department issues this statement:

"The agreement to establish an eight-hour day was entered into on May 5, 1916, and the eight-hour work-day went into effect on May 9, following. The eight-hour work-day was therefore in effect for seven months and twenty-three days and the nine hour work-day for four months and eight days during the year 1916. The nine-hour work-day was in effect during all of the year 1915.

"The deficit in total production in 1916 as compared with 1915 was due to the fact that fewer men were engaged in mining operations during 1916 than in 1915.

"It is interesting to note that the production in 1917 is materially in excess of the production for 1916. The production in May of this year was 6,917,525 tons, as against 5,547,899 tons for May last year, and the production in 1917 up to and including May was 30,618,056 tons, as against 27,784,690 tons for the like period last year.

"From these figures it would appear that no gain in production would result from increasing the hours of labor in the anthracite mines at the present time. If greater production is to be obtained, it would seem that some other method must be devised than increasing the number of hours per day."

#### **MANGANESE DEVELOPMENT IN ARKANSAS ATTRACTS NOTICE**

Unexpected and important developments of manganese in Independence and Izard counties of Arkansas have given more promising aspect to the domestic manganese situation. The production of this one district in a month is now greater than the production of the whole United States before the war. On the other hand, a number of the manganese bearing districts have failed to respond to prices which are three to four times above normal. The Geological Survey and the Bureau of Mines are sparing no efforts in attempting to encourage a greater local production of this important alloy metal. The need for doing so is clearly pointed out in the War Bulletin of D. F. Hewett, of the Geological Survey, extracts of which were printed in the June issue of the MINING CONGRESS JOURNAL. W. C. Phalen, of the Bureau of Mines, as well as other representatives of that Bureau and the Geological Survey, is in the field gathering information with regard to regions in which manganese occurs and in encouraging miners to undertake operations on this mineral.



### GOVERNMENT EXPERTS WELL KNOWN TO MINING MEN

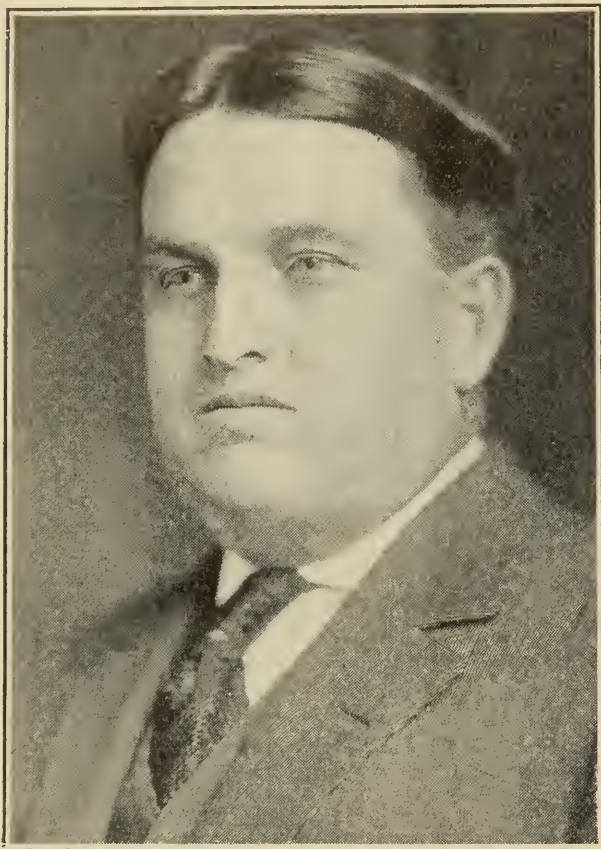


*Photo by Harris & Ewing*

Prof. G. H. CLEVENDER  
Metallurgist

Prof. G. H. Clevenger was born in Pike County, New York. His early education was obtained in Rapid City, S. Dak. Later he attended the State School of Mines in the same city and was graduated in 1901 with degrees of B.S. and E.M. After a year in commercial practice he attended the Columbia School of mines and was graduated in 1903 with a degree of A.M. He then spent two years in the field. In 1905 Mr. Clevenger accepted the position of instructor in metallurgy at Stanford University. In addition he did post-graduate work and took the degree of metallurgical engineer.

During his summer vacations and at other times Mr. Clevenger has engaged in consulting and investigative work. On many occasions this has taken him to Latin America. He is particularly familiar with the Guanajuato, El Oro, Pachuca and the Sonora mining districts of Mexico. He also has worked in San Salvador. In the United States his active consulting work has been confined largely to Colorado and Nevada. He has made several trips to the Cobalt district of Canada. One of Professor Clevenger's inventions is a process of ore treat-

ment in use at the Nipissing mine. For the past three years Professor Clevenger has been on the consulting staff of the Bureau of Mines and is now conducting an important investigation into the cyanide situation. An account of this investigation will be found in another column.

### RESERVES OF SULPHUR LARGE BUT EVERY REASON EXISTS FOR DE- VELOPMENT OF PYRITE SUPPLY

Large reserves of practically pure sulphur are on hand at the mines of the Union Sulphur Company, in Louisiana, and on the property of the Freeport Sulphur Company, at Freeport, Tex. This reassuring information has been brought back to Washington by P. S. Smith, the administrative geologist of the United States Geological Survey. Reports have been in circulation for some time that the sulphur of the United States had been depleted greatly and that a serious situation threatened, due to the reduction of imports of Spanish pyrite.

While Mr. Smith finds that there is no reason to think that the production of sulphur will not continue at practically the same rate as in the past several years, he points out that this fact should not be taken as a reason to relinquish the exertion of every effort to continue to develop domestic supplies of pyrites. To use the practically pure product, when sulphur obtained from its combination with iron and other minerals will serve many purposes equally well, would be very poor policy, Mr. Smith believes. He advises that every means be taken to encourage the use of the less valuable material rather than taking the pure product for the making of sulphuric acids and other processes which do not require it. Mr. Smith also calls attention to the fact that two-thirds of the country's production of pure sulphur is used by the paper mills. Since the European practice has shown very clearly that sulphur from pyrite is highly satisfactory for this use, he believes that this means should be taken of conserving the purer supplies which are now more greatly needed by the nation than ever before.

That many gold and silver mines, many of them long since abandoned, should be the source of enormous quantities of sulphur is another conclusion which has been reached by Mr. Smith after a detailed investigation of the subject. In many mines the pyrite content of the veins is very high. That this can be saved with profit to those conducting the mining and at the same time be of great service to the country, is the view expressed by Mr. Smith.

### Given Spelter Rate

Zinc and spelter dross from western points to Gulf ports have been given the advantage of the same rates as are contemporaneously in effect on spelter without observing the long and short haul provision of the Fourth Section of the act to regulate commerce.



## LAKE CARGO COAL RATE REPORT BRINGS OUT PROTESTS

Some of the points made in the brief of the Pittsburgh Coal Operators' Association in opposition to the Interstate Commerce Commission's preliminary opinion on lake cargo coal rates are as follows:

"We suggest that the shippers of lake cargo coal are entitled to some participation in the results of the greatly improved conditions of operation on the Norfolk and Western, because those shippers have helped in every way to make those results possible. Instead, it is proposed that those shippers should pay relatively 6 cents per ton more.

"We submit that the Commission should reopen the lake cargo proceedings and require the production of the witnesses for whom we asked, or exclude from all consideration in the case the exhibits involved.

"The bearing of the conclusion as to Ohio River bridges is excepted to in that the effect of the finding is to increase the West Virginia differential as against the Pittsburgh district as well as against the Ohio district."

The Central West Virginia Coal Operators' Association filed the following exceptions:

"The tentative report accepts as convincing tests made by the carriers based upon a limited number of destination points but assigns as one of the reasons for disregarding tests made by the operators, the fact that they are based on a limited number of shipping points.

"The report should have found that the shipment of high volatile coals from southern West Virginia east to tidewater is negligible

"The tentative report assumes that from 3,500,000 to 5,500,000 tons of bituminous coal used in Chicago annually come from the Kentucky and West Virginia (exclusive of New River and Pocahontas), whereas the evidence shows in exact figures that this tonnage is considerably less than the figures thus assumed."

The proposed advances in bituminous coal rates to Central Freight Association territory, brings forth the following from the operators in the Pocahontas, Tug River and Thacker districts:

"Admitting for the sake of argument that the carriers may lawfully make a joint showing, we desire to call the attention of the Commission to the seriousness of breaking up and destroying a rate relationship of fourteen years' standing under which great business enterprises have been built up and under which great tonnages move and of establishing a new differential upon the evidence of one man. The gravity of the situation is enhanced when, as is true in this case, the evidence of that witness is not confined to facts within his own knowledge."

### Receive \$34,000 Worth of Radium

During May radium valued at \$34,000 was delivered the Bureau of Mines by the National Radium Institute.

## MOSCOW STATION MADE POSSIBLE BY GENEROSITY OF OPERATORS

Generous contributions by the operators of mines in Idaho have made possible a Bureau of Mines station at Moscow. A number of months ago the Bureau of Mines entered into a cooperative agreement with the University of Idaho to establish a Federal station at Moscow for the purpose of investigating all mining problems of that region. Action on the part of Gov. Moses Alexander in vetoing the appropriation for the university's portion of the expense of the maintenance of the station apparently put an end to the project. The need for such a station, however, is so apparent that the operators, by voluntary contributions, have raised the University's portion of the expense and the work of the station already has been begun.

Van H. Manning, Director of the United States Bureau of Mines, has assigned C. A. Wright, a geologist in the Bureau's service now stationed at the Salt Lake City station, to take charge of the supervision of the work at Moscow. The work done by Mr. Wright on Joplin and Wisconsin zinc ores has attributed largely to his well-established reputation.

One of the principal activities of the Moscow station will be a study of the subject of ore dressing. In order that this work may be handled by an expert in this particular branch of the industry, T. Varley has been given general supervision of that work. Mr. Varley has been in charge of all non-ferrous ore dressing work for the Bureau. Before joining the Bureau of Mines he was in charge of the ore dressing problems for the Federal Mining Company.

## SUNDRY CIVIL BILL BECOMES LAW AFTER UNUSUAL DELAY

After long delay in conference, the sundry civil bill, which contains the appropriations for the Geological Survey and Bureau of Mines, has become a law. This bill carries \$1,550,520 for the Geological Survey and \$1,167,070 for the Bureau of Mines.

The bill provides money for the establishment of three large mining experiment stations and for the construction of three additional mine rescue cars. Investigations are now in progress looking to the selection of the location of the three experiment stations. It probably will be several weeks before the locations are announced. It is understood, however, that one station will be devoted to the iron industry, one to the oil industry and one to the ceramic industries.

The bill makes possible a change for which the Bureau of Mines has been striving for some time. It empowers the Public Health Service to assign members of its staff to work requiring a knowledge of physiology and medicine. In the past it often has been necessary for a mining engineer to pass upon purely physiological problems. It is to obviate this and to increase efficiency that the Bureau insisted upon this legislation.



### **MOST POWERFUL LOCOMOTIVE HAULING ANTHRACITE CARS**

Tests of a new type of giant engine recently received by the Philadelphia and Reading Railway Company for use on the mountain haul from St. Clair to Frackville are said, by the Pottsville Journal, to have been most successful. On its initial trip one of these monster locomotives pulled up this heavy grade twice as heavy a train load as was formerly hauled by the "bull moose" type of engine which it is replacing and which until now was the most powerful machine of its kind in the anthracite region.

The size of this new type of locomotive astonishes all who view it. It has a total weight of 282½ tons and the driving wheels are 52 inches in diameter. The high pressure cylinders measure 36 inches, and the low pressure ones are 40 inches. Automatic stokers provide a constant food to the fire box, the fuel being conveyed through a worm screw attachment operated by a wheel from the rear of the fire box.

Evidence of the great pulling power of these engines was shown in the trip of the first to be tested. On that occasion a train load of 3,500,000 pounds was hauled up the heavy grade, and at the satisfactory speed of about half as fast as the time schedule for passenger trains. Because of the immense size of the engines, the company is placing 130 pound rail on the grade, and an additional clearance of 30 inches has to be provided along a part of the right of way.

### **WEST VIRGINIA OPERATORS WANT NATIONAL PROHIBITION**

At a general meeting of the Central West Virginia Coal Operators' Association, held in Fairmont, W. Va., recently, the following resolution was adopted unanimously:

"Resolved, That this Association, representing a membership of coal operators producing annually more than 15,000,000 tons of coal in the counties of Monongalia, Marion, Harrison and Taylor, in the State of West Virginia, do request our Members of Congress and United States Senators to use all their influence and every effort to further the cause of National Prohibition, in order to conserve the supply of grain and also to promote greater industrial efficiency."

### **WILL TRY TO SAVE TIN FROM CANS THAT HAVE BEEN USED**

As a part of its work in the prevention of mineral waste, the Bureau of Mines has taken up, at the Seattle Station, an investigation of the amount of tin, zinc and iron that may be recovered from scrap tin plate, used tin cans and galvanized iron. This investigation will take into consideration the commercial feasibility of the attempt to conserve the above metals which are now wasting.

### **RESUSCITATING DEVICES SUBJECT OF REPORT**

In view of the increasing uncertainty with regard to the use of mechanical devices for resuscitation, the following report on these devices by the Public Health Service will be of interest:

"From time to time, at the request of the General Superintendent of the Life-Saving Service (now consolidated with the Revenue-Cutter Service into the United States Coast Guard), investigations have been made by this service of certain mechanical devices recommended for the resuscitation of apparently drowned persons. A request from the same official was received in January, 1915, that tests be conducted of an apparatus called 'lung motor' to determine its merits for use in resuscitating the apparently drowned.

"The investigations of the apparatus were conducted at the Hygienic Laboratory by Surg. J. W. Schereschewsky and Technical Assistant G. B. Roth from May to July, 1915, when a report was rendered. It was in substance the opinion of the investigators that, while manual methods of resuscitation should be primarily relied on and cannot be dispensed with by any mechanical device thus far known, mechanical means for producing artificial respiration should be available in places where accidents may occur from drowning or exposure to poisonous gases. Mechanical methods of respiration are especially indicated in cases of great relaxation, collapse of the lungs, and gas poisoning, and also when signs of reanimation fail to appear shortly after the application of manual methods.

"While, in so far as actual ventilation of the lungs is concerned, mechanical methods are superior to manual, it was the opinion of the investigators that the delay incident to the application of mechanical methods at a time when every second is of value constituted a serious argument in favor of manual methods. They therefore recommended that in all cases of submersion or exposure to poisonous gases manual methods should be applied without delay and let the use of mechanical respiration be decided by the condition of the subject.

"As a device for mechanical respiration in appropriate cases, the investigators concluded that the lung motor is a satisfactory device provided the suction stroke is not used. They were in accord with the committee on resuscitation from mine gases, who, in their report to the United States Bureau of Mines, condemned expiration produced by repeated suction of air from the lungs. It was recognized that the lung motor may be used as a device for producing inspiration only, the suction stroke being dispensed with. In this case the apparatus should be provided with a release valve, which will allow air to escape



outside whenever inspiratory pressure reaches a maximum of, say, 20 millimeters of mercury. Used in this manner and by persons having the requisite skill and experience the investigators were of the opinion that an apparatus similar to the lung motor would be free from danger and in suitable cases have a field of usefulness."

### **Booklet Tells of Motor Truck's Trip**

Motor truck men and motorists of every station were vitally interested last summer and fall in the double transcontinental journey made by a 1½-ton GMC truck, which first successfully negotiated the national highway from Seattle to New York and then returned to the Pacific port by way of the middle west and southwest.

As the most remarkable long distance trip ever completed by a motor truck and as a demonstration of the practicability of overland trucking, the journey of the GMC stands out prominently in the history of the motor truck industry. It was a superhuman labor for William Warwick, the man who drove it the entire journey alone, and a supermechanical work for the truck.

Warwick's experiences in the mud of every State, over mountains and through canons make a tale as romantic as any fiction and as full of interest as the memories of Bayard Taylor or any other travelers of note. In addition, Warwick had the advantage of photography and his story of the trip has ample illustration in the snapshots which he took at every stage of the way.

So great has been the demand for the details of the trip, as viewed in the perspective of the completed journey that the General Motors Truck Company has compiled Warwick's story and his pictures into an attractive booklet for the benefit of any one who would like to read the story of the truck's long voyage.

These booklets are just recently off the press, and the General Motors Truck Company will gladly send copies to any who asks for them.

### **An Interesting Publication**

In its recent issue, the *Employees' Magazine*, published by the Lehigh Valley Coal Company, tells of plans for a library and reading room for the free use of employees and which is to be located in the main office building, at Wilkes-Barre. This issue contains an interesting article by Superintendent Thomas Thomas, directing assistant foremen to remain in places with bad roof until they are made safe. There is an account of the Primrose mine fire, where helmet men were overcome while aiding in rescue work. A number of articles deal with technical subjects, and there are biographical sketches, prize contest problems, and much valuable information in the interest of efficiency, and accident prevention.

## **OIL DEPOSITS MAY EXIST**

### **IN EASTERN COLORADO**

The United States Geological Survey has not investigated the geology of eastern Colorado, western Kansas and western Nebraska with the detail that is necessary for the determination of local structures which are favorable to the occurrence of oil and gas. The general geology of this area has been described and mapped in Professional Paper 32, "Preliminary report on the geology and underground water resources of the central Great Plains," which shows broad major structure and contains records of numerous wells that have been drilled in the region.

As far as the Survey is informed, no authentic indications of oil or gas in eastern Colorado have been reported, but it is not impossible, this being a region of sedimentary rocks belonging to the formations that carry oil and gas in other areas that these deposits may be found. Professional Paper 32 includes mention of a boring at Cheyenne Wells, in Cheyenne County, in the lower portion of which considerable gas was encountered, as a consequence of which a local company was organized to develop a gas supply by a second boring. The latter reached a depth of 1,700 feet, but was then abandoned, as the gas was found to be of insufficient quantity.

Apparently, no oil and gas accumulations of economic importance have ever been discovered in Nebraska, although some of the western counties, notably Frontier and McPherson, are being tested. The following statement appears in Professional Paper 32 in connection with the description of an anticlinal axis which extends across western and central Nebraska and is clearly defined in the vicinity of Stockville and near Chadron:

"If there is oil in western Nebraska, the best prospects for obtaining it would be along this uplift, for in many regions the oil occurs in largest amounts along anticlinal axes. In the region north of Chadron and along Republican Valley near Indianola borings 3,000 feet deep would probably test the strata satisfactorily. It is believed, however, from the character of the rocks, where they are uplifted to the north and the west, that the prospects for oil in western Nebraska are not encouraging."

### **Facts as to Chromic Iron Ore**

Chromic iron ore occurs in scattered grains throughout many bodies of serpentine, and locally it forms nodules or lenticular masses large enough to be of commercial importance. Chromite is generally not magnetic, and can thus be distinguished from magnesite, but to render its identification sure certain chemical tests must be made to prove the presence of chromium. The simplest is to test it before a blowpipe in a bead of borax or salt of phosphorus, which, on cooling, becomes green.



**GOVERNMENT EXPERTS WELL  
KNOWN TO MINING MEN**

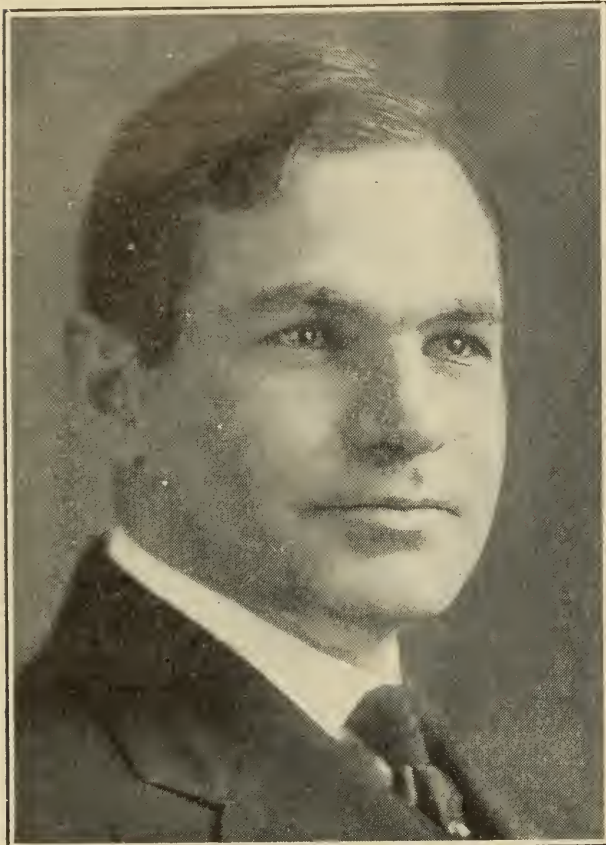


*Photo by Harris & Ewing*

**JAMES MADISON HILL**  
Geologist

James Madison Hill was born in Chicago, February 14, 1884. His early education was obtained in the public schools of Chicago. His preparatory work was done at the University School of Cleveland and at the Chicago Manual Training School. He then entered the University of Chicago and was graduated in 1906 with degree of B.S. He attained a senior scholarship in geology. In addition to post-graduate work in the University of Chicago, Mr. Hill did work at the Armour Institute and the Michigan School of Mines.

In 1907, Mr. Hill undertook some important geological work north of the Cobalt region of Canada. This district is now known as the Elk Lake region. Late in the same year he joined the Geological Survey. From that date until 1912 he was engaged principally in geological reconnaissance work in the western States, particularly in Nevada, Arizona, New Mexico, and Colorado. During this period, however, he did some work in practically all of the western States. Mr. Hill was engaged in 1912 and 1913 in making a detailed geological study of the Gilpin County district of Colorado. In 1912

he was assigned to the mineral resources division of the Survey.

Mr. Hill is now specializing in platinum, paint materials, barite, strontium and in gold, silver, copper and zinc, in the eastern States. He also is in charge of the bauxite and aluminum work being conducted by the Survey.

**RAILROADS POINT TO WAGE  
INCREASE AS REASON FOR  
BIG FREIGHT RATE INCREASE**

Further increases in the wages of railroad employes were disclosed in the shippers' cross-examination of railroad executives before the Interstate Commerce Commission in the 15 per cent rate case. Judge Dickinson, receiver of the Rock Island, stated that wage advances his company would be compelled to make to various classes of employes would add several million dollars to his previous estimate of increased operating costs. It was stated for the Burlington that there had been increases in wages since the petition for advanced rates was made of over \$3,000,000 a year. The Missouri Pacific presented figures showing an increase of \$1,278,000 in the company's pay roll in addition to the increased wages to trainmen, and it was stated that the shop men were asking for an increase of nearly \$2,000,000 in their wages on the Missouri Pacific.

The railroads had previously estimated that the Adamson law and other wage increases would add \$116,000,000 to the pay roll, but today it was stated that recent adjustments of pay and the demands of shopmen and other employes would greatly increase this amount.

Judge Dickinson was followed by R. H. Aishton, President of the Chicago & Northwestern, W. B. Biddle, President of the St. Louis-San Francisco; B. L. Winchell, traffic director of the Union Pacific, and A. L. Conrad, Assistant General Auditor of the Santa Fe. Mr. Winchell was asked by one of the shippers' representatives whether he knew of any way whereby rate relief could be given to the less prosperous roads without unduly adding to the profits of the few prosperous companies. Mr. Winchell said that he knew of no way that this could be done.

Mr. Biddle was questioned regarding the Frisco reorganization expenses and the increased capital of the company under the reorganization plan. Mr. Biddle said that while the securities had been increased in amount, stock had been substituted for bonds so that the fixed charges were now smaller than before the receivership.

The new Union Pacific ticket office in New York was the target of criticism from one of the shippers' representatives. He said he had not seen the new office, but he had read that it was as palatial as a Fifth Avenue drawing room. He asked Mr. Winchell if this were not an extravagance in times like these. The Union Pacific traffic director said that only \$6,000 had been expended in fitting out



the office and he did not think that this was an extravagant amount to spend on a ticket office in the greatest city in the country. When asked whether the railroads could not save a great deal of money by abolishing competitive ticket offices in the large cities, Mr. Winchell said this was entirely possible if somebody would first abolish competition between the railroads.

### **CARL SCHOLZ TO DIRECT BIG COAL OPERATION FOR THE C., B. & Q.**

Formal announcement was made recently that Carl Scholz has accepted the position as consulting mining engineer of the Chicago, Burlington & Quincy. To do so, he resigns the position as manager of the mining and fuel department of the Chicago, Rock Island & Pacific Railway.

Mr. Scholz began his new work with the Burlington on June 1. That railroad has about 15,000 acres of coal land in Franklin County, Illinois. It desires to develop at once, a large mine for the production of the fuel to be used by that railway. It selected Mr. Scholz for that particular work and he is starting in with the intention of developing what he believes will be the model mine of the world—at least that is his present ambition.

It is interesting in this connection to know that this is the fourth position that Mr. Scholz has held in his lifetime. He came to America from Germany about twenty-five years ago. After temporary work in West Virginia, he joined the force of the Mount Carbon Coal Company. This position he retained until he went into business for himself, having as a partner, James Thomas, of Charleston, W. Va. They developed a couple of mines and ultimately sold them to the Sunday Creek Company, of Columbus, Ohio.

He was a consulting engineer in St. Louis for a short time when he accepted a position as manager of some mines for the Rock Island Railroad in Oklahoma and afterwards took over the management of other mining properties in which the Rock Island-Frisco combination became interested. It was in this way that he became first the director and then the head of the Consolidated Indiana Coal Company and the Coal Valley Mining Company with headquarters in Chicago and mines in northern Illinois.

Lately Mr. Scholz has been manager of the mining and fuel department of the Rock Island which he organized. He not only had charge of the mines operated by that company for the production of its own coal but he supervised the purchase of other coal and also the distribution and burning of it. He made a record in the latter respect which is truly astounding and it may be said without going into details, that he is the first man in America to put the fuel department of a railroad upon a scientific basis.

The results already obtained are big enough to make a record for almost any man, but a



CARL SCHOLZ

routine was started which will save the Rock Island increasing amounts of money as the years go on.

Not only that, but this year he devised and put into effect a series of contracts for coal which will give, it is believed, the Rock Island the best fuel record in America.

These things would seem to indicate that Mr. Scholz has lived a busy life, however, they only begin to tell of some of his achievements. For one thing, as a consulting engineer and geologist, he discovered, proved and opened a coal field in Alabama where no one believed any coal existed. He has always been interested in coal combustion, has worked patiently at it for a number of years, finally developed and put on the market one of the best grates for hand-firing furnaces that has ever been designed. He has a growing company that is devoting itself to that now.

In a public-spirited way, he has acted as consulting engineer and geologist, working with the Bureau of Mines and the United States Geological Survey. He has been a member of and participated in the activities of many scientific societies and for a number of years has been director of the American Mining Congress and for three years was its president. It is not going too far to say that under his administration, the Mining Congress was for the first time put upon a sound financial basis due entirely to his activities.

Mr. Scholz is 45 years of age.



# DURATION OF IRON ORE RESERVES A MATTER OF NATIONAL CONCERN

Director Smith of the U. S. Geological Survey in Address before Editors' Conference Tells of Anxiety Caused by Tremendous Run on Iron Deposits—  
Metal Content Decreases as Demand Becomes Greater

Efforts that are being made by the Geological Survey to seek out the minerals of which there is a deficiency of supply were discussed by Dr. Geo. Otis Smith in an address before the conference of editors of business papers, held in Washington recently. Dr. Smith's address is as follows:

The United States Geological Survey is largely a service of exploration, so that it may be appropriate for me to map out in a reconnaissance way some of the territory now occupied by both Government and industry. In one sense, pretty much all has become twilight zone now, because Business and Government must have joint possession in order to secure best results.

I need not trace for you the progress of this idea of relationship between Government and business, nor point out the changes in attitude, or in policy, my purpose is only to emphasize the fact that never before has the connection been closer nor the conviction stronger that these two co-tenants are, and of right should be cooperative rather than antagonistic.

America's largest war-profits will come in the growth of ideas and ideals, and I venture to suggest to you gentlemen representing the business press of the country that foremost among these larger ideas will be our greater realization of the interdependence of Government and industry. Our nation in its time of stress is gaging its sources of strength and the Federal Government is leaning heavily upon every productive industry. But on the other side, I believe the patriotic leaders of industry who are backing up our President are coming to appreciate better the contributions that can be made to their business through Governmental agencies.

The United States Geological Survey tries to promote American industrial development through investigations of natural resources—the nation's wealth in land, in water, and in minerals. For nearly 40 years this scientific bureau has expended the people's money in exploration and research, and one part of this work has been the making of an annual inventory of mineral resources, not merely a statistical statement of production and consumption, but with that a study of the sources of this mineral wealth and an estimate of the reserves to be drawn upon for future use.

At the very outbreak of the European War, Secretary Lane called public attention to the industrial readjustment that must result and a few weeks later the Geological Survey de-

veloped this idea further by publishing a bulletin entitled "Our Mineral Reserves," in which the opportunities for expansion in the mineral industry were discussed. The subtitle of that little volume "How to make America Industrially Independent," had then more of a "scare-head" look, but in less than three years many of the possibilities therein set forth have become actualities and our mines are supplying much that was then imported, while in the four most important metals, iron, copper, zinc, and lead, the nation's resources of ore have been found sufficient to meet the rapidly increasing demands of our allies, although for the present year this will mean increases of from 50 to 90 per cent above the average output for the years just preceding the war.

Any inventory of America's mineral wealth cannot fail to reveal—large reserves of most of the essential minerals, large productive capacity of mine and smelter, and large consumption of these raw materials in the varied industries which you editors represent. Such facts spell out industrial independence in a degree not approached by any other nation. Yet with this rapidly expanding business of the nation, some deficiencies of supply stand out and therein comes the opportunity of the Federal bureau to serve private industry. Not only does the United States Geological Survey in thousands of cases act as the agent in bringing consumer and producer together, but its field geologists are today in the West and South seeking to add to the known supply of such varied minerals and ores as pyrite, platinum, graphite, manganese, potash, tungsten, glass-sand, tin, molybdenite, and nickel. To stimulate production and facilitate distribution is our aim and we can do this only through serving directly the various industries concerned.

The geologic work of adding to our supplies of the mineral fuels is properly a function of the Government—it is the collection of facts, which like long-lived seeds will come to ultimate fruitage. Too much value can hardly be placed upon investigations which add to the known resources of such essential raw materials as coal and iron, for example. We appreciate coal most when the supply runs short. In writing an editor of a coal paper only this morning, regarding the priorities of coal-users, I stated the case of the railroads somewhat in this way—if railroads are sometimes termed the arteries of an industrial nation, coal comes nearest being the vital

spark that keeps the heart pumping the currents of commerce along these many lines, that together constitutes a circulatory system hardly less complex than that in the human body. Without a sufficient and adequately distributed supply of this fuel which furnishes our power, the whole mechanism of our industrial life will slow down and stop.

No less truly is iron at the basis of America's industrial development. The present output of iron is so large that it can hardly be plotted on the same scale with the other metals. This tremendous run upon Mother Earth's treasure vaults makes the duration of our iron-ore reserves one of national concern. Just yesterday in reading the manuscript of a Survey report on the iron-ore supply, I was struck with the complexity of the subject. The annual census of ore mined shows an already large tonnage rapidly increasing each year, and the average metal content slowly decreasing each year, so that together these two factors make any estimate of reserves difficult, and this difficulty is added to by the gratifying fact that at present new discoveries of ore are practically keeping pace with the heavy production. In a word, the geologist and engineer have not yet discovered all the iron ore in the country, nor has the metallurgist reached his limit in utilizing the lower grades of ore. On the subject of coal and iron we Americans can be optimistic.

But I am mentioning only one class of problems with which the Geological Survey is dealing at this time. Our hydraulic engineers are equally active in putting at the service of the industrial engineers all the steam-flow data necessary to the best use of the rivers of the United States, whether for power or irrigation, and the corps of topographers, specially trained men who usually are engaged in making the maps that are found useful in so many of the arts of peace—this corps is now acting under orders of the War Department and thus doing its "bit in national defense."

About a year ago, before an audience of scientists, I expressed my belief that in certain respects a scientific bureau needs to be as practical as any industrial plant, that big business and pure science alike must be productive without undue waste or high cost. To you editors in this conference, I wish to add, that I pledge the best efforts of nearly nine hundred associates in the United States Geological Survey to cooperate with you in making more effective use of the varied energies of our nation. A federal bureau exists only to serve.

### Increased Rates Suspended

Proposed increases in the rates for the shipment of coal and coke from Arkansas and Oklahoma points have been ordered suspended by the Interstate Commerce Commission, until July 26.

## ELECTRICITY NO BAR TO COAL DEVELOPMENT IN THE WEST

Any increase in the production of coal which may be obtained on the Pacific coast will be readily absorbed locally in the opinion of Alfred G. White, economist of the Bureau of Mines, who has looked into this matter recently. Fear has been expressed in some quarters that the success of railroad electrification in the West would have a retarding influence upon the development of coal properties. A study of the relative use of coal, fuel oil and water power convinces Mr. White that the latter two sources of power will not affect the development of the coal industry.

In fact it is more probable that the development of the coal industry of the West will have a tendency to retard electrification. The coal mines in most cases are owned by the railroads. Since the railroads are the principal users of fuel, it is natural to suppose that they will develop these properties rather than attempt to use electricity, excepting on such portions of their lines where all conditions particularly favor it. With the increasing population of the West, there is a constantly enlarging demand for coal as a domestic fuel. Since the use of coal is increasing very much more rapidly than is the population a clear indication is furnished that the industries are increasing and that practically all of them are using coal as the source of their power.

To use electrical power advantageously requires such advantages of location that it is believed that the average industrial plant in California must rely more and more upon coal as the supply of fuel oil decreases. Even if the supply of oil should continue constant or should increase, the price outlook is such as to favor increased use of coal.

### Bureau of Mines Publications

The Bureau of Mines has issued the following publications:

Coal-mine fatalities in the United States, 1916, compiled by A. H. Fay, 1917. 42 pp.

Bulletin 119. Analyses of coals purchased by the Government during the fiscal years 1908-1915, by G. S. Pope. 1916. 118 pp.

Bulletin 143 Abstracts of current decisions on mines and mining, reported from May to August, 1916, by J. W. Thompson. 1917. 72 pp.

Technical Paper 87. Methods of testing natural gas for gasoline content, by G. A. Burrell and G. W. Jones. 1916. 26 pp., 7 figs.

Technical Paper 106. Asphyxiation from blast-furnace gas, by F. H. Willcox. 1916. 69 pp., 8 pls., 11 figs.

Technical Paper 165. Quarry accidents in the United States during the calendar year 1915, compiled by A. H. Fay. 1917. 77 pp., 1 pl.

Technical Paper 168. Metal-mine accidents in the United States during the calendar year 1915, compiled by A. H. Fay. 1917. 114 pp., 2 figs.



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JULY, 1917

## MUCH OF WASTE IN COAL MINING NOT WILFUL, DIRECTOR MANNING POINTS OUT CLEARLY

Statements in the newspapers relative to the annual loss of 250,000,000 tons of coal is undoubtedly quoted from a publication issued in 1912 entitled "Notes on Mineral Waste." The statement was made by the late Director of the Bureau, Dr. Joseph A. Holmes. Information received by Van H. Manning, Director of the Bureau of Mines, from the coal mining engineers of the Bureau, from their investigations in various fields, fully substantiates Dr. Holmes's statement that one-third of the coal originally in the ground is at the present time lost.

It is, of course, true that in certain areas and with certain managements the recovery will be very much higher, particularly in long-wall mining where nearly all the coal is recovered; but on the other hand there are various fields where fully one-half the coal is left in the mines, Mr. Manning points out.

The losses come about in the following ways:

1. In the nonrecovery of pillars.
2. By careless mining.
3. In the loss of roof coal and small beds immediately above the coal bed being mined through being broken by such mining.
4. The loss of fine coal, such as produced by machine mining and by excessive blasting being thrown into the gob.
5. Coal of a dirty, or bony character which is left in the mine.

It must not be understood, Mr. Manning says, that the Bureau regards the loss of such coal as being in any sense wilful waste. In the past one of the principal causes has been extreme competition, which has made the margin of profit so low that only the most cheaply mined coal could be worked. It has been noted by

Geo. S. Rice, chief mining engineer, that in one mine where the prevailing thickness of coal worked was 10 to 12 feet, it was impossible to get the miners to work 5-foot coal at a price which would allow it to be sold in competition with the thicker coal.

"Large losses of coal occur in Central Illinois and Indiana," says Mr. Manning, "because the bottom is comparatively soft and it is necessary to leave very large room pillars to prevent squeezes, and these room pillars are never recovered. The only alternative under the mining conditions is to drive the entries to the boundary of a given property and work back, taking out the coal completely. This defers returns to the mine operator, and needs large capital. With the small margin of profit there has been in the past this is difficult to meet.

"Moreover, as much of the surface is splendid farming land, it is more valuable per acre than the coal in place, and as the surface is comparatively flat and usually requires extensive tiling the farm owners would rather have some of the coal sacrificed than to damage the tiling and surface through extensive subsidence. Nevertheless, the Bureau is hopeful that improved methods will be adopted, such as long-wall and the filling of the excavations with sand, shale, and cinders, thus obtaining practically all the coal; but it must be expected that this will mean an increased cost in producing the coal, which is one reason why in European coal mines the coal costs more to produce, since there such improved methods are generally required by the land owners or by the government authorities."

## MAP AND NAMES MEET APPROVAL OF GEOGRAPHERS

A map and classified list of names of the physiographic divisions of the United States have been prepared by a committee of the Association of American Geographers. This committee includes two members of the Geological Survey's committee on physiography and has worked in close collaboration with the Survey's committee. The map and list have met the general approval not only of the members of the Association but of other physiographers and geologists, both here and abroad, and will doubtless for many years be regarded as a standard. The committee on physiography unanimously recommends that the Geological Survey adopt the classification. Instructions have been issued by the Survey that these names and boundaries should be used by every Survey author in any manuscript prepared for publication unless he can show that some other classification is better adapted to the area he describes or better expresses the facts known to him. Any Survey geologist who is not satisfied with the classification or the names will state his objections and the grounds for them to the committee on physiography, which will consider the objections and submit recommendations to the Chief Geologist.

### GOVERNMENT EXPERTS WELL KNOWN TO MINING MEN

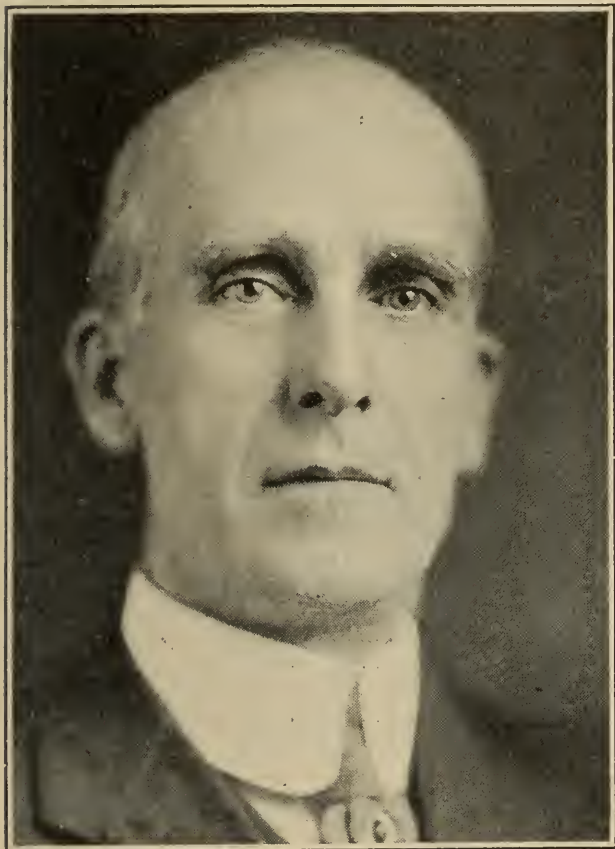


*Photo by Harris & Ewing*

Dr. RICHARD B. MOORE  
Metallurgist

Dr. Richard B. Moore was born in Cincinnati. His early education was obtained in London and Paris. Afterwards he attended the University College of London and later went through Chicago University from which institution he was graduated in 1896. He then took a post-graduate course in chemistry at the University of Chicago.

Following his post-graduate course, Dr. Moore spent eight years in the University of Missouri as a member of its faculty. He then was called to the Chair of Chemistry in Butler College in Indianapolis where he served for six years.

Dr. Moore was associated for a time with Sir William Ramsay, the noted English chemist, with whom he conducted special research work.

On his return to the United States, Dr. Moore was called to the Department of Agriculture where he was made assistant to the chief of the United States Bureau of soils. For the past five years, Dr. Moore has been in charge of the Colorado station of the United States Bureau of mines which is devoted chiefly to rare metal work.

### LABOR REPRESENTATIVES ADDED TO PEABODY'S COAL COMMITTEE

One billion tons of coal is the promised production for the nation next year under an agreement reached between officials of the United Mine Workers of America who met the coal committee of the Council of National Defense here by special invitation.

W. S. Gifford, director of the Council of National Defense made the following statement:

"Far-reaching results are expected from the meeting held in the office of the Secretary of Labor with representatives of the United Mine Workers of America, the American Federation of Labor, the Council of National Defense, and the Committee on Coal Production of the Council. As a result of this conference the following representatives of labor will become members of the Committee on Coal Production.

"John P. White, president; Frank Hays, vice-president; Wm. Green, secretary, and John L. Lewis, statistician, of the United Mine Workers of America, James Lord, president of the Mining Department of the American Federation of Labor; John Mitchell, chairman of the Industrial Commission of the State of New York, and H. L. Kerwin, secretary to the Secretary of Labor."

In addition to Secretary of Labor Wilson and the representatives of the United Mine Workers of America, there were present at the meeting Samuel Gompers, president of the American Federation of Labor and member of the Advisory Commission; F. S. Peabody, chairman of the Committee on Coal Production; and W. S. Gifford, director of the Council and of the Advisory Commission.

### GEOLOGISTS PLAY IMPORTANT PART IN WAR PREPARATIONS

The War Department is establishing army camps at numerous points for training and quartering its forces. The geological situation involved in the site is an important matter. A competent geologist points out features in possible sites which might be determinative as between conflicting claims of different localities. Such matters as water supply, drainage, local climate and adaptability to troop movements which are distinctly dependent upon the geology and topography of any district, are also of fundamental importance in selecting camp sites.

Another subject on which geology bears strongly is the location of earthworks and lines of defense. Certain formations make ground finely adapted to defensive fortifications like Round Top at Gettysburg while others, like glacial eskers around Boston, have little or no value. Some permit rapid excavation for trenches, etc., while others forbid it. Many formations differ little in outward appearance except to a trained geologist and have a similar appearance on maps, yet for military purposes they are as different as black and white. Some formations always make bad territory for troop movements, others are good in dry weather but hopeless in wet weather, while still others can always be traveled over with ease.



## MINERS' CONSUMPTION SUBJECT OF PUBLIC HEALTH SERVICE REPORT

Miners' consumption consists essentially of a mechanical injury to the lungs due to the prolonged inhalation of hard-rock dust, says a recent statement from the Public Health Service. It has been recognized as being prevalent in some American mining districts, particularly in the Joplin zinc and lead districts. It was to determine its actual prevalence, and its relationship to pulmonary tuberculosis that the investigation was undertaken.

In the Joplin district certain mines are known as "sheet-ground" mines, in which the ore is found imbedded in an exceedingly hard flint. In drilling and other mining operations this flint rock is finely pulverized. The minute rock-dust particles enter the lungs, in the process of natural breathing, and by their irritating action cause the formation of fibrous, or scar-like tissue. The effect of this is to lessen the lung's ability to expand and contract, with the result that the victim first notices that he is becoming short winded. With continued exposure to this silica containing dust, the difficulty of breathing increases, until the miner is no longer able to perform active physical labor. It was found also that men with dust-injured lungs were especially liable to develop tuberculosis, the dust irritation lessening the ordinary resisting powers of the lungs. While miners' consumption is not in itself infectious or contagious, it predisposes to tuberculosis. The greater the amount of rock-dust injury the greater the liability to tuberculosis; the far advanced cases of miners' consumption practically all become tuberculous before their death.

Under an entirely voluntary system 720 miners presented themselves for physical examination, of whom 433 were found to have had their lungs injured by the inhalation of rock dust; of these 103 were also tuberculous, the amount of tuberculosis infection being greatest among the advanced cases of the rock dust disease.

Five years steady work with exposure to flint dust is fairly certain to find the miner in at least the first stages of miners' consumption. If the miner continues his work after being affected, death usually results within ten years from the time that exposure to flint dust commenced. Poor housing conditions were found to be prevalent and to add to the liability of tuberculosis infection. Apparently tuberculosis is now occurring at an earlier stage of miners' consumption than was formerly the case. The report lays emphasis on the necessity of preventing the spread of tuberculosis through these cases, especially among miners' children. The fact that miners' consumption is a forerunner of tuberculosis necessitates that it be treated with the same hygienic precautions as is the latter disease.

The statement concludes that aside from the hygienic supervision of underground working places, the education of the miner against the spread of infection and supervision of miners' children, especially those of consumptive parents, are matters of vital importance.

## UTAH MINING MEN BUY BIG BLOCKS OF LIBERTY BONDS

By A. G. MACKENZIE

Salt Lake City, June 20.—Utah mining men and mining companies furnished about \$4,000,000 of the amount subscribed for the Liberty Loan in the State. The State's allotment was six and one-half millions, which was considerably over-subscribed. Among the largest mining subscriptions were the following:

|                                                           |           |
|-----------------------------------------------------------|-----------|
| Col. E. A. Wall .....                                     | \$500,000 |
| Utah Copper Company.....                                  | 500,000   |
| American Smelting & Refining<br>Company.....              | 500,000   |
| W. A. Clark .....                                         | 450,000   |
| Utah Consolidated Mining Com-<br>pany.....                | 250,000   |
| Employees of the Utah Copper<br>Company.....              | 205,000   |
| M. Cullen .....                                           | 125,000   |
| Jesse Knight .....                                        | 100,000   |
| J. E. Bamberger.....                                      | 100,000   |
| Utah Fuel Company.....                                    | 100,000   |
| Silver King Consolidated Mining<br>Company.....           | 100,000   |
| International Smelting Company.                           | 100,000   |
| Employees of Carbon County Coal<br>Mines.....             | 85,000    |
| Employees of American Smelting &<br>Refining Company..... | 65,000    |
| Solon Spiro .....                                         | 50,000    |
| Mrs. Spiro.....                                           | 10,000    |
| Thomas Kearns .....                                       | 50,000    |
| David Keith.....                                          | 50,000    |
| Chief Consolidated Mining Com-<br>pany.....               | 50,000    |
| Samuel McIntyre.....                                      | 50,000    |
| U. S. Fuel Company.....                                   | 50,000    |
| Silver King Coalition Mines Com-<br>pany.....             | 25,000    |
| Ernest Bamberger .....                                    | 25,000    |
| John Dern.....                                            | 20,000    |
| Clarence Bamberger.....                                   | 10,000    |

The subscriptions had not been completed at the time this is written. The amounts given in many cases represent only a portion of the total subscription of companies and individuals, as many subscriptions were divided among several States.

### LOWERS RATING

In the belief that the insurance rates placed on the mining industry by the new State Industrial Commission under the Workmen's Compensation law were higher than the circumstances required, the Utah Chapter of the American Mining Congress retained Dr. I. M. Rubinow, of New York City, a well-known actuary and a recognized authority on Workmen's Compensation insurance rates, to investigate the situation for the information of the mining men and the Commission.

Dr. Rubinow arrived in Utah, May 27, and devoted two weeks to an investigation of the situation. Accurate mining pay-roll figures were prepared for him and he personally in-

spected the mining conditions, surface and underground, and visited reduction plants. His report, which is an interesting document embodying valuable statistics and calculations, has been filed with the State Industrial Commission and copies have been sent to the mining men of the State for their information.

Dr. Rubinow's investigations and calculations show that the insurance rate on metal mines of Utah should be \$4.25 instead of \$5.59, the rate proposed by the Industrial Commission at the suggestion of the Workmen's Compensation Service Bureau of New York, an organization representing large casualty insurance companies. Dr. Rubinow also found that the rate for Utah coal mines should be \$6.04 instead of \$9, the rate proposed by the Commission.

The Industrial Commission has Dr. Rubinow's report under consideration and a decision on the question is expected within a few days as the new Workmen's Compensation law becomes effective July 1.

#### **RAILROADS ASK COOPERATION OF SHIPPERS AND CONSIGNEES IN MOVE FOR CAR ECONOMY**

Howard Elliott, former President of the New York, New Haven and Hartford Railroad, and now a member of the Railroads' War Board, outlines the efforts the War Board is making to arrange for movement of the essentials of life and war, rather than "the things we can get along without in this terrible world crisis."

"The War Board feels," Mr. Elliott said, "that if the war goes on the total amount of transportation now available will not be enough."

"It will be absolutely necessary to use such transportation as there is for essential things. The public should willingly give up the non-essentials. It is going to be a great deal more important for this country to move food, fuel, and iron and the like than to move luxuries. We hope that we are going to be able to move them all but I think it is only fair to point out the facts, and to ask the public's support."

"The railroads have done their best in the last eighteen months to add to their cars and engines. There have been placed in service since November 1, 1916, 989 new engines and 44,063 new cars. Orders have been given for—as of April 1—2,209 engines and 104,917 cars. We hope they will be received between now and the first of next January. If so, there will have been introduced between Nov. 1, 1916, and Jan. 1, 1918, 148,980 cars into the service, with an average capacity of over 50 tons; and 3,188 engines, with an average tractive power of 54,000 pounds, which is very much above the average of the engines of the United States.

"On May 1, there was, according to the record, a 'shortage' of 150,000 cars. In round numbers there are 2,500,000 cars in the United States. If, through better loading by the ship-

per, better unloading by the consignee, better movement by the railroad, and more alert work by every man in the railroads, from the President down to the waterboy, each car is used more efficiently, it will not take long to get what amounts to an added service of 150,000 cars out of the cars on hand.

"The Railroad War Board appeals to railroad officers and employees, to shippers and to the public generally to cooperate in every way to make more efficient use of the existing railway plant. It is absolutely necessary to make every car, engine, track, freight house, and every other appliance do more work.

"One of the first and most important measures the Railroads' War Board has under way is to help move a greater quantity of fuel to the northwest and at the same time bring east the greatest quantity of iron ore possible from the upper lake ports. This will provide for industrial activity both east and west next winter and also insure a supply of domestic coal.

"With the cooperation of the lake carriers, and the ore carriers we have arranged for a pooling of shipments of lake coal so that when coal arrives at lower lake ports, there will be minimum delay in putting it into the boats, thus releasing the cars and sending the boats forward promptly.

"There is very luxurious passenger service in some places in the country and we would like to keep it up, but the country can get along without some of it. We are suggesting changes in the passenger schedules, not with the idea of saving money, but simply to save man power, fuel and motive power, all of which must be applied to the transportation of necessities.

"The Railroad War Board has supplied to the Government five trained railroad officers, who were commissioned to go to Russia to help the Trans-Siberian Railroad to move toward the Russian front the freight piled up at Vladivostok.

"We are arranging to obtain nine regiments of trained railway officers, and employees to help the English and French people carry on railroad activities, principally in France.

"The War Board's organization includes sixteen experienced railway officers, including the five executives, composing the head committee, and eleven others who are here permanently. There are in addition sixty-nine general employees and eighteen inspectors who travel about the country.

"This is an expensive piece of machinery. Our estimate is that, not counting the services of the War Board and the railroad officers who are devoting a very large amount of their time to this national work, the American Railways will contribute the equivalent of about \$500,000 a year to this special work. And we are glad to do it.

"I think we will win this war sooner if first we wake up to the magnitude of the task, and then, not only mobilize our marvelous man power, but also coordinate with that our money power, our business organization, our



press, and all the other manifold industries of these United States, turning all this mobilized and coordinated power to the sole purpose of supporting our allies in maintaining the highest ideals of humanity and civilization.

"That is what the American railways are trying to do through their War Board."

### **OPERATORS REQUESTED TO AID MINE GARDEN MOVEMENT**

In order to stimulate gardening in mining camps, a copy of the following letter was sent on May 31 to all mining companies in the United States by the Bureau of Mines.

"It has come to my attention that certain of the mining companies throughout the United States have officially taken up for their employes, the wives of employes, and children, plans for the growing of vegetables in the yards of the workers and even on vacant land owned by the companies. Some of the companies have even gone to the extent of supplying, either free or at cost, fertilizer and seeds, and also made provision for the plowing of the ground at actual cost. In other instances the companies have offered prizes for the best gardens of \$25 for the first; \$15 for the second; \$10 for the third, and a number of minor prizes, with the result that a great amount of patriotic enthusiasm has been aroused.

"I have been so impressed with the starting of such a movement, modest as it is at the present, that I feel it to be my patriotic duty to urge upon all mining companies, where the conditions are favorable, to start some similar plan that would in the end result in a vast increase in the amount of food products raised during this time of national emergency.

"War today is as much a matter of food supplies as actual fighting in the trenches. The man or woman or child who raises enough vegetables this summer in his garden to feed the family places at the disposal of the men at the front fighting for a world democracy just that much food.

"The growing of these vegetables has also the additional virtue of giving healthful outdoor exercise to the people and for their consumption vegetables which are fresh. Back of all this you are helping to maintain the soldiers and the less fortunate populations of the world that have been thrown out of their natural orderly life by the encroachment of the war upon their properties.

"The Department of Agriculture is enthusiastically in favor of this movement and has prepared for the use of those interested Farmers' Bulletin 255, "The Home Vegetable Garden," which will be sent to anyone who makes application. This pamphlet has already proved of valuable assistance to those engaged in making a garden. I take pleasure in sending to you under separate cover a copy of the pamphlet, so that you may see its value in this work.

"It is suggested that those who join this garden movement shall place in their gardens an American flag as a reminder that he who serves his country in that capacity serves the flag."

The movement to plant additional gardens for the purpose of coping with the abnormal conditions as affecting the food supply, was given an impetus in the anthracite coal fields by the operating companies. Hundreds of acres were placed at the disposal of not only employes but of other persons who made requests for plots.

The Philadelphia & Reading Coal & Iron Company in March issued a notice advising all employes to plant any ground over which they had control, offering to allot plots to other employes who would apply for them and promising to cooperate in any helpful way. Hundreds of tracts were assigned to applicants, many of whom were not employes of the company. A graduate of State College was engaged by the company and is being assisted by two practical farmers in directing the work of the amateur farmers. Several hundred leases were executed by the Lehigh & Wilkes-Barre Coal Company for desirable plots in a fine farming district and the Lehigh Valley Coal Company granted leases at the rate of 50 weekly during April and the first half of May for tracts situated in all three regions.

What is practically a community farm is being cultivated by the residents of East-End, a Wilkes-Barre suburb, on a large plot of ground owned by the Delaware & Hudson Company. The Susquehanna Coal Company early in the spring furnished teams and wagons for tenants in preparing their gardens for cultivation and granted the use of vacant land to other employes. The Delaware, Lackawanna & Western Railroad Company, the Pennsylvania Coal Company and the Scranton Coal Company gave the use of suitable land for plots and to cooperate with a civic organization which is interested in the movement. The Lehigh Coal & Navigation Company has offered cash prizes to tenants in several mining towns for the best gardens. The policy of the larger companies has been followed by the smaller operators, wherever they have any land available, as in the instance of the Kingston Coal Company, which plowed under twenty acres of fine land and apportioned it among employes.

### **Study Flotation at Corvallis**

In cooperation with the Oregon Bureau of Mines and Geology, the Bureau of Mines is now carrying on an investigation, under the direction of W. H. Coghill, as regards the effect of flotation oils on surface tension. This work is being done in the laboratories of the Oregon Agricultural College at Corvallis, Oregon, at which institution Mr. Coghill is Professor in Metallurgy.

**COAL PRICE FIXING PLAN****PUT INTO EFFECT JULY 1***(Continued from page 236.)*

Knoxville, Tenn.; F. F. Floyd, Knoxville, Tenn.; J. H. Wheelwright, Baltimore, Md.; Sam W. McComb, Harlan, Ky.

Maryland—J. H. Wheelwright, Baltimore, Md.; A. W. Calloway, Baltimore, Md.; Howard Brydon, Piedmont, W. Va.; T. B. Davis, New York City; George Watson, Fairmont, W. Va.; T. M. Dodson, Bethlehem, Pa.; J. S. Brophy, Frostburg, Md.

Ohio—Edwin Jones, Jackson, Ohio; Fred Ebersbaugh, Pomeroy, Ohio; E. M. Poston, Columbus, Ohio; G. C. Weitzel, Columbus, Ohio; S. H. Robbins, Cleveland, Ohio; T. K. Maher, Cleveland, Ohio; C. E. Maurer, Cleveland, Ohio.

Pennsylvania—Rembrandt Peale, New York City; F. H. Wigdon, Philadelphia, Pa.; T. H. Watkins, New York City; James P. Walsh, Pittsburgh, Pa.; J. T. M. Stoneroad, Pittsburgh, Pa.; A. R. Hamilton, Pittsburgh, Pa.; J. C. Brydon, Somerset, Pa.

Tennessee—E. C. Mahan, Knoxville, Tenn.; L. C. Crewe, LaFollette, Tenn.; Jno. L. Boyd, Knoxville, Tenn.; J. B. Campbell, Atlanta, Ga.; W. P. Davis, Knoxville, Tenn.; C. M. Moore, Caryville, Tenn.; Jno. E. Patton, Chattanooga, Tenn.

Virginia—C. E. Bockus, New York City; D. D. Hill, Jr., Roanoke, Va.; John L. Kemmer, Philadelphia, Pa.; Otis Mauser, Big Stone Gap, Va.; George L. Carter, Coalwood, W. Va.; Webb Willett, Norton, Va.

West Virginia—C. H. Jenkins, Fairmont, W. Va.; J. H. Wheelwright, Baltimore, Md.; J. R. Thomas, Charleston, W. Va.; T. B. Davis, New York City; W. D. Ord, Landgraff, W. Va.; R. H. Gross, Boston, Mass.; E. W. Knight, Charleston, W. Va.; D. R. Lawson, secretary, Fairmont, W. Va.

Wisconsin—Peter Reiss (chairman), Sheboygan, Wis.; W. W. Broughton, Minneapolis, Minn.; E. A. Uhrig, Milwaukee, Wis.; E. E. Heiner, Minneapolis, Minn.; J. A. Maher, Minneapolis, Minn.; E. M. Saunders, St. Paul, Minn.; H. E. Smith, St. Paul, Minn.

Anthracite—W. J. Richards, C. F. Huber, W. N. Williams, P. C. Madeira, S. B. Thorne, John Marks, S. T. Peters; additional members, W. N. Truesdale, E. E. Loomus, Joseph Dickson.

Arkansas—J. H. Puterbaugh, McAlester, Okla.; W. P. Hawkins, St. Louis, Mo.; Robert A. Young, Greenwood, Ark.; H. N. Taylor, Kansas City, Mo.; M. M. McWilliams, Spadra, Ark.; W. C. Shank, Kansas City, Mo.; J. R. Barr, Bonanza, Ark.

Iowa—Edward Smith (chairman), Des Moines, Iowa; W. W. Oliver, Centerville, Iowa; W. W. Wilson, Ottumwa, Iowa; Homer H. Harris, Ottumwa, Iowa; Joshua Norwood, Des Moines, Iowa; John Shuler, Des Moines, Iowa; P. H. Hynes, Albia, Iowa.

Kansas—John Mayer (chairman), Kansas City, Mo.; J. F. Flemming, Kansas City, Mo.;

C. P. A. Clough, Kansas City, Mo.; Ira Clemens, Pittsburg, Kans.; Chas. Spencer, Pittsburg, Kans.; L. J. Lawrence, Pittsburg, Kans.; James Hamilton, Weir City, Kans.

Missouri—F. W. Lukins (chairman), Kansas City, Mo.; John Bovard, Kansas City, Mo.; H. G. Kellogg, Kansas City, Mo.; I. Pickering, Richmond, Mo.; J. C. McGrew, Jr., Lexington, Mo.; Seth Serat, Kansas City, Mo.; Tom Bowen, Windsor, Mo.

Oklahoma—James Cameron (chairman), Henrietta, Okla.; J. F. Emmert, Kansas City, Mo.; Chas. Price, Henrietta, Okla.; D. J. Gordon, Oklahoma City, Okla.; J. R. Crowe, Jr., Kansas City, Mo.; James Duncan, Alton, Ill.; T. B. Drew, McAlester, Okla.

Texas—W. K. Gordon (chairman), Thurbur, Texas.

An assessment on all operating coal companies of one-quarter of a mill per ton for the support of a national association of coal operators, to have headquarters in Washington, was among important arrangements made at the conference. For some time it has been apparent that there must be a clearing house in Washington for the various coal trade associations. As twenty-five secretaries of the different associations were present in Washington at the price-fixing conference, advantage was taken of the opportunity to get the machinery for such an organization in running order. After preliminary meetings by the secretaries, it was found to be the consensus of opinion that the national association would be helpful to the industry, to the public and more especially to the Government.

The membership of the national association is to consist of State and district associations and bureaus of coal operators who are actively engaged in the production and distribution of coal. The management of the association is to be vested in an executive committee to consist of one member selected by each of the member associations. The executive committee is to select a secretary, council and other necessary employees and fix their salaries, and is empowered to levy such assessments upon a pro rata basis of tonnage as may be necessary for the financial support of the association. The activities outlined for the association are as follows:

*Publicity.*—Handling such matters as a coal bulletin, prepared daily from telegraphic advices of prices from all coal mining sections and given to the Associated Press for publication throughout the country the following morning; furnishing news bulletins as to prices, production, and all matters of interest to the daily press and to the coal journals, publicity campaigns, etc.

*Statistical.*—Handling such matters as uniform cost accounting, improved methods, production, etc.; preparing reports to Government departments; obtaining data from various Government departments and compiling for use of members.

*Legal.*—Handling such matters as Government contracts, uniform contracts with rail-



roads, public utilities, municipalities, etc.; car supply; mine rating; cases before Interstate Commerce Commission and Federal Trade Commission; presentation of matters to Congress and State legislatures; preparation of income tax returns; enforcement of State labor laws, workmen's compensation acts, safety requirements, insurance, etc., and Federal laws; a credit bureau, national in scope, as to coal dealers.

C. P. White, of Cleveland, and C. E. Leshner, statistician of the United States Geological Survey, were named temporary president and secretary of the association.

That all should be smooth sailing in the carrying out of so far-reaching a plan as that set to work at the price-fixing conference was not expected. As a result, there have been and will be some disquieting features and there will be difficult problems to solve. This was evidenced early in the sessions by the uncertainty of the Department of Justice as to giving assurance as to whether it is lawful for producers to meet with Government agents and fix prices. There is no doubt, however, in the mind of Governor Fort, of the Federal Trade Commission, with regard to what the Department of Justice has promised in this regard. He is on record with the following statement in this connection:

"I might say this to you gentlemen, that any arrangement that you make as to the price of coal at the mine with the Federal Trade Commission will not be interdicted by the public authorities. I think we are in a position to state that an agreement with an agency of the Government will not be thought to be contrary to the Sherman law provision against combinations.

"The Attorney General fails to see any reason, in the interest of justice, for the Department of Justice to punish or to attempt to hold parties agreeing with the Federal Trade Commission on prices as criminally guilty of an illegal act. He does not see why the Government should prosecute individuals or corporations for an agreement with a Government agency on fair and equitable prices for the sale of commodities to the Government and all consumers."

The reductions made in prices go into effect July 1 next in the prices of coal. These prices are maximum prices per ton of 2,000 pounds aboard the cars at mine, pending further investigation. These prices do not affect in any way contracts in existence or sales of coal for foreign or export trade.

The operators tendered to the Government a reduction from these reduced prices of 50 cents per ton for coal that the Government may need.

No action was taken upon anthracite prices because of the fact that these prices had already been acted upon by the Federal Trade Commission.

Twenty-five cents per net ton was fixed as the maximum price for coal jobbers' commission, with only one commission, no mat-

ter how many jobbers' hands the coal may pass through.

On account of an inadequate representation of operators west of the Mississippi River, no maximum prices were fixed for coal from those districts. A supplementary statement will be issued within a few days covering prices on coal produced in those districts.

### **GEOLOGICAL SURVEYS ARRANGE FOR CLOSE COOPERATION**

A degree of cooperation never before reached is in effect between the United States Geological Survey and the Surveys of the individual States. This has been brought about in a series of conferences between F. W. DeWolf, president of the State Geologists' Association and W. O. Hotchkiss, the secretary of the same organization, with George Otis Smith, Director of the United States Geological Survey, and with David White, Chief Geologist of the Federal Survey.

While the State surveys have cooperated to a considerable extent with the Federal Bureaus heretofore, the work has not been coordinated to the extent that was desired. Under the stress of war conditions, however, it has been possible to achieve in a few days what has been striven for during many years.

The Geological Surveys in the separate States represent in the aggregate a corps of unusually efficient men who are willing to lay aside purely local considerations in order to engage in work which will hold up the hands of the nation in this emergency. The total amount of money appropriated for geological processes by the States also makes a handsome total which will be directed in working out the problems most necessary for the nation's good.

Mr. Hotchkiss, who is the State Geologist of Wisconsin, is also the chairman of the subcommittee on imported mineral materials of the committee on geology of the National Research Council. Other members of his committee are: George M. Kunz, of Tiffany & Company, New York; Joseph Hyde Pratt, State Geologist of North Carolina; David White, of the Geological Survey, and Charles L. Parsons, Chief of the Division of Mining Technology, of the United States Bureau of Mines. Manganese and pyrite are to receive the chief attention of Mr. Hotchkiss' committee. Its activities, however, will not end with the work to be done on these important imported materials, but will extend to tungsten, mica, graphite, glass sands and other materials now in national demand on account of the war.

### **Colorado Report Out**

With the usual care which characterizes reports issued by the State of Colorado, the fourteenth biennial report of the Bureau of Mines just has been issued. Commissioner Carroll has written his report in a very readable manner. His chapter on custom smelting and milling is especially interesting.

### ACTIVE WORK IN PROGRESS ON TIN PROPERTIES IN U. S.

While increases are being made in the domestic production of tin, the development of tin properties, which is proceeding rapidly, gives no indication that any large production may be expected. In view of the fact that any domestic production relieves, to just that extent, the strain on shipping the United States Geological Survey is engaged in an active effort to furnish the operators of tin mines in this country all possible advice. H. G. Ferguson, one of the Survey's geologists, has just returned from the personal inspection of the tin bearing deposits of Virginia and of North and South Carolina. His observation convinces him that the opportunity of operating profitably in the hard rock is small. He is of the opinion, however, that considerable tin production will result from the handling of decomposed outcrops of the pegmatite dykes and in the residual placers.

There are geological reasons to indicate possible important disclosures in the development of the likely-looking deposits near the headwaters of the Irish Creek in the Rock Bridge section of Virginia. Assays that have been made of the samples collected in this region show a high percentage of tin and considerable interest is being manifested in the outcome of development work.

### MINE RESCUE CARS UTILIZED IN EDUCATIONAL CAMPAIGN

For the purpose of assigning definite territory to its mine rescue cars, the Bureau of Mines has divided the United States into nine districts. The headquarters of each district is selected with relation to the mining districts so as to make possible the dispatch of a rescue car in the shortest possible time.

With the experience of the past several years, the Bureau has found that its rescue cars can be put to almost constant use rather than utilizing them only in case of accident. The cars now are kept in motion much of the time. With its expert personnel, the car becomes a disseminator of educational information which is being spoken of highly by operators and men alike in the districts where this work has been in progress. The rear of the car is frequently used as a platform from which to address public gatherings in mining camps. As the car is equipped with motion picture machines and stereopticons which aid materially to the interest in the addresses, these lectures have been found to be very useful in bettering mining practices in regard to safety and conservation. On visiting a mining camp the members of the car's personnel offer their services in an advisory capacity with regard to matters pertaining to the general welfare of operators and workmen alike.

Each of the three new rescue cars are identical in construction. The floor plan consists of:

(a) Demonstration room in which is stored all of the oxygen mine rescue apparatus, first-aid materials and accessories.

(b) A corridor leading along one side of the car from the demonstration room to the rear end.

(c) The first compartment off the corridor is the foreman's stateroom which has berths and lockers for four men.

(d) The second compartment is the bathroom, provided with toilet and bathing facilities, including a shower bath.

(e) A third compartment is the engineer's office, in which are two desks, bookcases, and berths and lockers for three men.

(f) A fourth compartment consists of a dining room provided with linen closet, center table and chairs, etc. In one corner of the dining room there is a typewriter desk which the clerk will make his office.

(g) A fifth compartment consists of the cook's stateroom and separate toilet.

(h) The sixth compartment is fitted up as an up-to-date car kitchen with range, ice chest, lockers, etc., and the regulation funnel arrangement and exhaust fan in the roof for ventilation purposes. A double-coil Baker heater system is located in the kitchen end of the car.

The Reno car, which will be known as Car No. 1, and which will make its headquarters on the University of Nevada campus at Reno, Nev., is manned by the following crew:

Edward Steidle, mining engineer,

J. V. Berry, foreman miner,

Walter F. Pyne, first-aid miner,

D. W. Cooke, clerk, and a cook.

The personnel of Car No. 2, with headquarters at Raton, N. Mex., is as follows:

C. A. Herbert, mining engineer,

K. H. Chisholm, foreman miner.

Jas. Dalrymple, Jr., first-aid miner.

A. F. Goldbloom, clerk.

The personnel of Car No. 5, to be located at Butte, Mont., is as follows:

C. A. Allen, mining engineer,

J. J. Forbes, foreman miner,

S. C. Dickinson, first-aid miner,

S. S. Blum, clerk.

In addition to the above, a mine surgeon will be detailed for duty on each of these cars for the Public Health Service.

### CRANBERRY CREEK COAL CO.

#### TAKES OVER HAZELTON COLLIERY

The Cranberry Colliery at Hazleton, acquired from A. Pardee & Company by the Lehigh Coal & Navigation Company on July 1, 1916, has been transferred to the Cranberry Creek Coal Company and will in future be operated by that company.

The operating officers of the Cranberry Creek Coal Company are as follows: Edwin Ludlow, president, Lansford, Pa.; H. M. Crankshaw, Manager, Hazleton, Pa.; E. Hughes, Purchasing Agent, 437 Chestnut St., Philadelphia, Pa.



## **NAVY GETS BATTLESHIP COAL AT \$2.33½ PENDING COST PROBE**

Pending an investigation as to the cost of production, the Navy will be furnished coal at a price of \$2.33½. A tentative arrangement to that effect was brought about after numerous conferences between Navy Department officials, the Committee on Coal Production and various operators. The operators offered to furnish the Navy's requirements, which are approximately 1,800,000 tons, at \$2.95. Secretary Daniels held that this price is too high. His coal specialists advised him that the cost of production averages \$1.72 a ton. Prominent operators were called upon to show that this calculation is erroneous. After numerous meetings, neither side was able to establish its contention to the satisfaction of the other and the operators decided to comply with a suggestion by Secretary Daniels that the difference between the two prices be split and that the Federal Trade Commission undertake an immediate investigation as to the cost of production. Once the cost of production is established, all coal furnished is to be paid for on a cost-plus basis.

The following letter with regard to the matter was sent the coal operators by the Secretary of the Navy:

"Effective at once, please be prepared to furnish your proportion of the total quantity of coal required by the Navy, for the period ending September 30, 1917.

"The coal furnished will be from mines now on the Navy Acceptable List.

"The price to be paid for such tonnage as you may be required to deliver is to be determined later, and, as the result of this Department's decision as communicated to the Committee on Coal Production, Council of National Defense, will be contingent on the cost of production, data concerning which is now being prepared. As an advance payment, however, this Department will allow the unit of \$2.335 per gross ton, F.O.B. mines, although it is to be understood that any payments made at this rate will be subject to such increases or decreases as may be later decided upon as proper by reason of the ultimate decision with respect to cost of production, plus such reasonable profit as may be allowed.

"It will also be understood that the figure finally agreed upon as a proper amount to be paid your company will be subject to such increase or decrease in transportation or labor costs as may be exacted of you during the period of the formal contract.

"In making the allotments described herein every effort has been made to treat all suppliers equitably, consideration being given to the questions of productions, convenience of transportation and other governing factors. However, in view of the inability to reach a definite agreement as a result of the several conferences held on this subject, it has not been practical to, as yet, investigate as thoroughly as might be desired, so that, if it is found a possible injustice has been done to any supplier, upon receipt of

satisfactory evidence bearing out such contention, steps will be taken to remedy same in subsequent allotments in the best interests of all concerned.

"It is probable that deliveries under this order may be required in the immediate future and you will, therefore, make all necessary preparations to meet such deliveries as may be called for, on which it may be necessary to make telegraphic assignments."

## **HOPES TO HAVE USE FOR MORE ACID AFTER THE WAR**

Care is being taken by the Bureau of Mines in its numerous activities looking to the encouragement of domestic production of minerals and related products to look at the matter from a business-like standpoint. When considerable risk is entailed, every effort is made to call attention to the fact that present high prices may be temporary. This is illustrated by the sulphuric acid situation. Acid plants can be constructed only at great cost and the probabilities indicate that the present price of acid will be limited to the duration of the war. While every effort is made to point out the advantages of saving sulphuric acid at smelting plants, attention is also called to the possibilities of over production after the war.

Since it is very desirable to recover all by-products possible from smelting operations, efforts are being made looking to the profitable use of the sulphuric acid in new lines of industrial endeavor, such as in the treating of phosphate rock.

## **BUREAU OF MINES SUCCESSFUL IN FLOTATION EXPERIMENTS**

Marked success has followed the experiments at the Salt Lake City station of the Bureau of Mines in flotation oils. This is especially true of the various oils obtained from the destructive distillation of hardwoods. The creosotes also have been found to be acceptable flotation oils. Pyroligneous acids from resinous wood distillates have been demonstrated to possess little value in flotation work.

## **ALL GEOLOGISTS IN THE U. S. TO BE LISTED AND CLASSIFIED**

It is the hope of the United States Geological Survey to list every geologist in the country. A census of the geological profession is now being taken. As the returns are received the geologists are being classified under their different specialties. All information necessary to secure a comprehensive idea of the experience and class of work the geologist is best equipped to handle will be so arranged that it can be referred to immediately. It is anticipated that it will be necessary to call upon many geologists for important cooperation in the existing emergency.



### WARRINER SAYS ANTHRACITE POOL WILL HELP NEW ENGLAND

A concrete explanation of several interesting features of the anthracite situation was made by S. V. Warriner, of Philadelphia. He said:

"You are all very vitally interested in the domestic fuel supply for New England this year, and I want to assure you that in behalf of the anthracite producing and transporting interests, the matter is having our very earnest consideration.

"There are perhaps two factors that have led to the shortage of anthracite, if there really be a shortage of anthracite, all over the country, and the major factor in connection with that has been that the consumption of domestic coal has considerably increased. That is not an abnormal situation, in that it always increases when the times are prosperous. People do burn more coal. They are not so careful about screening out their ashes, and the resultant is that everybody uses more than he does under normal business conditions.

"The second reason is—and to what extent it affects New England we do not know, as it is a very difficult thing to tell—as you will recall, last year at this time, or perhaps a month later, the market was very flat; people could not be induced to buy coal at that time, and there was more or less restriction on the part of the producing companies, and the active demand did not come until September or October. This year the very opposite is the fact, and people who never have stored coal before are now storing coal for a year or a year and a half supply in their bins, and getting it if they can only get it in 1-ton lots from the dealers, and if they want 8 or 10 tons, they go to eight or ten dealers, and that complicates the situation, and makes this situation, so far as the retail dealer is concerned, a very embarrassing one, because it increases their cost of delivery.

"The production of anthracite coal, so far this year, is ahead of what it was last year. For the month of May the anthracite companies produced 6,917,000 tons, withing a few hundred tons of the largest production in the history of the anthracite trade.

"So far as the amount of coal going into New England is concerned, taking it as a whole, the situation there is almost normal. That is, so far this year it compares, within a very few tons, with the normal transportation moved into New England for this period of the year. But still New England is out of coal, there is no doubt about it, and it is especially so along certain lines, certain parts of New England, as far as we can find out. Some parts of New England apparently are very well taken care of; other parts of New England are dry as a bone. It is especially true along the Sound, and along the coast, in the northern part of New England, and also it is true of the small local towns in the interior, especially in the northern part. I think that so far as the situation of our interior New Haven points is concerned—towns like Springfield, Hartford

and others—they are fairly well taken care of, and a great many of the dealers have considerable coal on hand. There are two things which have, to a certain extent, interfered with that, which we are aiming to correct, and in spite of the fact that the New England householder is endeavoring to get enough coal into his bin for a year or a year and a half or two years, we expect, unless the situation radically changes, to have all the coal in New England that New England people under normal conditions will actually need. Whether or not it can be distributed properly is a different question.

"We have been a great deal concerned in regard to the barge deliveries at the start, due to the Government regulations. Those Government regulations have now been very largely removed, both as to restrictions in movement and restrictions as to the personnel of the crew on the tugs and barges. So that the Government has helped us in that particular.

"The other restriction has been due to the difficulty of forcing a sufficient amount of coal through the various gate-ways, all-rail, into New England, and that has been especially marked on the Boston and Maine R. R. The anthracite companies could have and would have shipped more coal into that New England territory if it had not been for those very serious restrictions occurring from time to time, both arising out of embargoes placed by the New England roads, due to congestion on their own lines, and embargoes placed by the anthracite roads due to the number of cars that accumulated from time to time on the New England roads. But in behalf of the anthracite committee we have now reached a working agreement with Mr. Starrow's committee, representing New England, and expect to have a conference with the presidents of the various New England railroads to see whether or not that cannot be speeded up. So far as our own company is concerned, we have shipped more than 50 per cent; by 50 per cent we have increased our shipments into New England all-rail over previous years, our shipments all going through the Poughkeepsie gate-way.

"In order to expedite the matter still further, we are now arranging a pooling system; that is, provided it will have the sanction of the Department of Justice and the Trade Commission, which I have no doubt it will, at least so far as the Trade Commission is concerned, under which there will be a director of transportation on each one of the company docks. The anthracite situation, as you understand, is a very different one from the bituminous. Bituminous coal is rather gathered from small mines and delivered into large storage yards. The anthracite tonnage is handled almost exclusively by the large railroad companies—that is, so far as the barge coal is concerned—only about 8 per cent of individual company coal going north of Cape Cod. But it is delivered to a multitude of comparatively small dealers. There are comparatively few large storage yards in New England, and that is one thing that New England has to correct for herself. She has to have



larger storage facilities, better distributing places. Up there there are a great many places where we are still limited, as regards the size of the cars, as regards the storage facilities, and delays in transportation at this time make the details of distribution a very difficult matter.

"But we are now starting a pooling system, under which the coal going over each of the initial lines' docks will be pooled under the supervision of a director. That is, each dock will represent a pool by itself. The company coal does not require to be pooled, but the individual coal, in so far as we can direct it up to New England, will be pooled so as to speed up transportation and eliminate delays.

"So that I feel assured that while the situation has been critical, and while the hurdles are not all jumped yet by any means, providing we can devise some way by which anthracite coal in larger quantities can go by the all-rail routes, we will not allow New England to suffer.

"I feel that, so far as the water-borne coal is concerned, from now on there will be a decided increase in the amount of coal going by water, and that it will simply be governed by barge capacity there. But that so far as all-rail is concerned, it is going to be limited by the capacities of the roads taking it through the various gateways.

"The western market and the southern market are to a very large extent getting already pretty well filled up, and the anthracite roads, I believe, are ready and willing to send into New England just as much as New England possibly can take. There is the situation, as I see it, in a nutshell. I should be very glad to answer any questions."

### **GOVERNMENT BEGINS COAL MINING OPERATIONS IN ALASKA**

Under the direction of the Secretary of the Interior, the Government is beginning coal mining operations in Alaska. The work is under the immediate direction of Herbert A. Meyer, assistant to the Secretary of the Interior. The necessity of relieving ocean tonnage of the burden of transporting coal for Alaska from Seattle is the chief reason which called for this activity on the part of the Government. As the work on the Alaskan railroad progresses, it is becoming more and more necessary to have the nearby coals developed and made available for use. The increasing demand for coal for domestic use and the desirability of reducing its cost to the lowest possible point is another factor which entered largely into the decision to begin mining operations.

Operating under a Government lease, William Martin opened a very promising coal property near Anchorage. The coal was of good quality and was being produced in increasing amounts. This led the Alaskan Railway Commission to enter into a contract with Mr. Martin for coal. Shortly after the execution of this contract a fault was encountered in the mine and it became impossible for Mr. Martin to comply with the

terms of the contract. He did not have sufficient capital to undertake the expensive operations necessary to locate his vein. In view of this fact the Alaskan Engineering Commission subleased the property from Mr. Martin. George Watkin Evans is now in Seattle purchasing machinery and supplies and securing the services of the miners to continue the operation of this property.

Another mine will be operated on tract No. 12 of the Matanuska coal field. Mining operations on a considerable scale will be undertaken at this point. The railroad has not been completed to the point where the mine will be opened but it is hoped to have some coal ready for use by the time the rails reach that point. It was from tract 12 that the coal was obtained which tested out so successfully under an examination conducted several years ago by vessels of the Navy.

Every effort is being made by the Alaskan Commission and the Department of Interior to encourage private mining operations in the hope of ending imports of coal at the earliest possible date.

### **GOVERNMENT BUYS TANANA RAILROAD—SOLVES FUEL PROBLEM**

Purchase by the government of the Tanana Valley Railroad, in Alaska, has been announced by Secretary Lane. This road runs from Fairbanks to Chatanika, with a branch to Chena, and traverses a country of agricultural and mineral wealth. This road will become a part of the Government railroad system now under construction in Alaska, the main line of which runs from Seward to Fairbanks, and will make available for mining operations in the Fairbanks district the coal in the Nenana field about 100 miles south of Fairbanks and adjacent to the main line.

### **Recommended for Fellowships**

Lewis G. Gerhardt, E. Harvey Miller, M. H. Smith, R. G. Hinman and Fred Sutter, have been recommended by the University of Utah for fellowships in Metallurgy. These fellowships are made possible by the cooperation of the Salt Lake City station of the Bureau of Mines. Those designated for fellowships are permitted to assist in working out the metallurgical problems on which the Bureau of Mines is working. They receive a nominal salary for the work done.

### **BUREAU OF MINES MAKES HIGH RECOVERIES OF POTASH**

By converting insoluble potash into a soluble form of the mineral and by breaking down certain silicates, the Salt Lake City station of the Bureau of Mines is making high recoveries of potash in the course of extensive experiments along this line.



## **TIDEWATER COAL EXCHANGE BEGINS WORK IN WASHINGTON**

In the organization of the Tidewater Exchange the Railroad Committee recommended as follows:

First: That there will be appointed an Exchange Commissioner, located at Washington, D. C.

Second: A Deputy Commissioner at each port.

(a) Norfolk.

(b) Baltimore.

(c) Philadelphia.

(d) New York.

Third: A Pier Superintendent or Shipping Agent at each port to report to Deputy Commissioner for that port.

We suggest a Legal Committee, as follows:

W. S. Bronson, Commerce Counsel, Chesapeake & Ohio Ry., Richmond, Va.; W. L. Kenter, Assistant General Solicitor, Philadelphia & Reading Ry., Philadelphia, Pa.; Geo. P. Bagby, General Attorney, Western Maryland R. R., Baltimore, Md.

We recommend for a permanent Auditing Committee, as follows:

L. A. Lambert, Auditor Coal and Coke Receipts, B. & O. R. R., Chairman; F. E. Briggs, Auditor Freight Accounts, N. Y. C. Lines; T. S. Neale, Auditor Coal Traffic, Philadelphia & Reading Ry.; P. L. Overman, Auditor Freight and Passenger Account, Western Maryland R. R.; W. C. Everett, Auditor, Virginian Ry.

The recommendations of the railroad committee were carried out, and Rembrandt Peele, of New York, was named commissioner.

## **MORROW URGES OPERATORS TO SEND IN WEEKLY REPORTS**

In connection with the movement to secure weekly reports of production, J. D. A. Morrow, the Commissioner of the Pittsburgh Coal Producers' Association, sent out the following letter to the operators in the Pittsburgh district:

"Accompanying this letter you are receiving a communication from the United States Geological Survey. It asks you to report weekly statements of your coal production, car rating and shipments to the Pittsburgh Coal Producers' Association. It also explains clearly the reasons for that request and the need of your unreserved and patriotic response thereto.

"This Association will combine the reports from the individual operators into consolidated statements for each field as a means of assisting the United States Geological Survey and the Committee on Coal Production and will send copies of these statements each week to these agencies of the Government. *Copies will also be sent promptly to each operator reporting.*

"Your reports to the Association will be held strictly confidential and will not be disclosed to any member or officer of the Association or to any one else. In that respect you will be treated precisely as if you were a member.

"Under separate cover cards are being sent you on which you are to make your reports.

These cards should be mailed to the Pittsburgh Coal Producers' Association, 323 Farmers' Bank Building, Pittsburgh.

"You will materially assist this Association and the authorities in Washington, if you will observe the instructions on the cards and the following suggestions, in making your report.

"1. Reports are to be made for calendar weeks, but in beginning, please send production and car supply reports for June 1 and 2 and thereafter for each week. This will enable us to begin our statistics with June 1.

"2. Kindly mail your reports so as to reach this office on Tuesday of each week at the latest.

"3. With your first reports, please inform us:

(a) To whom and at what address we shall mail you our consolidated reports.

(b) By whom your reports will be made out, with this employe's office address and telephone number.

"4. We will be glad to have you drop into the Association offices at your first opportunity so that we may become acquainted and so that you may satisfy yourself as to the manner in which this work is being handled."

## **NEW WORK OUT ON PURCHASE OF SUPPLIES FOR THE MINE**

Special importance is attached to the publication of a reference work on the purchase and utilization of mine supplies by Herbert N. Stronck and John R. Billiard. These men are mining engineers of national reputation. Their book is the first formal work ever published on this important subject. It was prepared at the request of a number of the leading mine operators of the country. Owing to the ever-increasing cost of mine supplies, the subject matter is of special importance at this time. Mr. Stronck has long been a member of the American Mining Congress.

## **LOSE EXPERTS AS PRIVATE EMPLOYERS BOOST SALARIES**

With the continued demand from private employers, the geological staffs of the United States Geological Survey and of the State Surveys are suffering to considerable degree. Attracted by salaries varying from two to four times those paid by the Government and by the advantages offered by long time contracts and promises of advancement, some of the most needed men in the employ of the Government are leaving. The attitude of Congress is distinctly hostile to any material increase in the salaries of the technical staff. Before the seriousness of the situation can be brought home to those who hold the purse strings, it is feared that much valuable aid, which could be given by the government, will have been rendered impossible. The situation takes on a more serious aspect at present from the fact that the Government scientific Bureaus are being called upon for a vast amount of information looking to the successful prosecution of the war.



## **CALIFORNIA MINERALS TO BE SUBJECT OF SPECIAL STUDY**

The California Mining Bureau under the direction of Fletcher Hamilton, state mineralogist, is starting a field campaign to report on the economic minerals of California, which have an important industrial and military bearing on the present war situation. For the past four years the bureau has been working on a complete survey of the entire state's mineral resources by counties, field work for which is now practically completed and the results in part published. Particular interest and value attaches at the present moment to available supplies of chrome, coal, iron, magnesite, manganese, molybdenum, quicksilver and tungsten.

The extent and availability of petroleum resources, which are so important in modern naval operations, have already been thoroughly covered by the bureau in its work of protecting the fields from damage by faulty operations. As data on the other minerals are already well in hand, trained geologists and engineers of the bureau's staff are being sent out to bring the information down-to-the-minute with relation to the latest developments in the above-named items. The report will cover the location, size, accessibility to transportation, character, quality, and state of development of every known deposit throughout the entire state.

W. Burling Tucker, chief field assistant, will visit the counties south of the Tehachapi Clarence A. Waring, field assistant, the counties along the Sierra Nevada Mountains from Tulare northward; Emile Huguenin, field assistant, the counties along the coast ranges from Monterey to Del Norte; Walter W. Bradley, mining statistician, Siskiyou and Shasta Counties; also quicksilver and research work on the metallurgy of quicksilver.

With the exception of a small tonnage of chrome from Oregon in 1916, and of magnesite from Washington in 1917, California has been the sole source of these two minerals in the United States. For many years California has been, and still is, producing from 70 to 80 per cent of the quicksilver yield of the United States. This metal is absolutely essential from a military standpoint, as there has not yet been produced a commercial substitute for it in the manufacture of fulminating caps for explosives. California is one of the two main producing tungsten states of the Union. This metal is especially valuable in the manufacture of alloys for high-grade tool steels.

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### **Shippers' Guide Issued**

An industrial and shippers' guide, issued by the Norfolk and Western Railroad Company is a publication of unusual merit for this type of work. While it is paper bound, it is splendidly printed, contains maps and

photographs which accent graphically many of the features of the publication. It was compiled by the agricultural and industrial department of the railroad at Roanoke, Va.

## **COAL COMPANY INTERESTS WORKING BOYS IN SCHOOL**

The problem of interesting working boys in education is being worked out with gratifying results by the Lehigh Valley Coal Company in its shops at Drifton, Pa., where a school is conducted in the interest of apprentices. It is difficult to determine whether the boys better enjoy the school or the shops, so well does the work of each supplement the other. About thirty boys are the beneficiaries of this plan, which is under the sympathetic direction of the superintendent, Mr. Johnston Campbell.

The pupils are paid for the time spent in the school, as its sessions are held during shop hours. There are two classes, membership in each being determined by the length of service in the shops. The younger boys are in charge of one of the general office force, and the more advanced class is taught by the chief draftsman. The boys are given thorough drills in penmanship, free-hand drawing from models, mathematics, and in spelling, with special attention to mechanical terms. Each class devotes one hour during the week to school work.

Practical shop problems are selected for frequent contests, and prizes of cash, standard works on mechanics, or shop privileges are awarded. A wide range of subjects is covered in the papers prepared by the pupils. An evidence of the close application of the apprentices to their studies and their work is seen in the exacting requirements of a recent contest, when they were asked to name all the parts in the machinery recently built in the shops for the new Drifton breaker. Other problems of a similar character are often given them, and occasionally they submit free-hand drawings of machinery with parts labeled. Some of the boys show marked proficiency. Recently one of them won a prize in a contest conducted by a technical journal.

The management also encourages the attendance of the boys at the night classes in the Mining and Mechanical Institute at Free-land, where they may enter the model training school and drawing classes. Their record at night school is kept and is credited to them. Those who attend regularly and show progress may have the date on which their rate of pay is changed advanced from one to three months.

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W. C. Phalen, who recently joined the division of mining technology of the Bureau of Mines, has begun work on a special treatise on salt. Later he will have a similar report on manganese.



AUG 8 1917

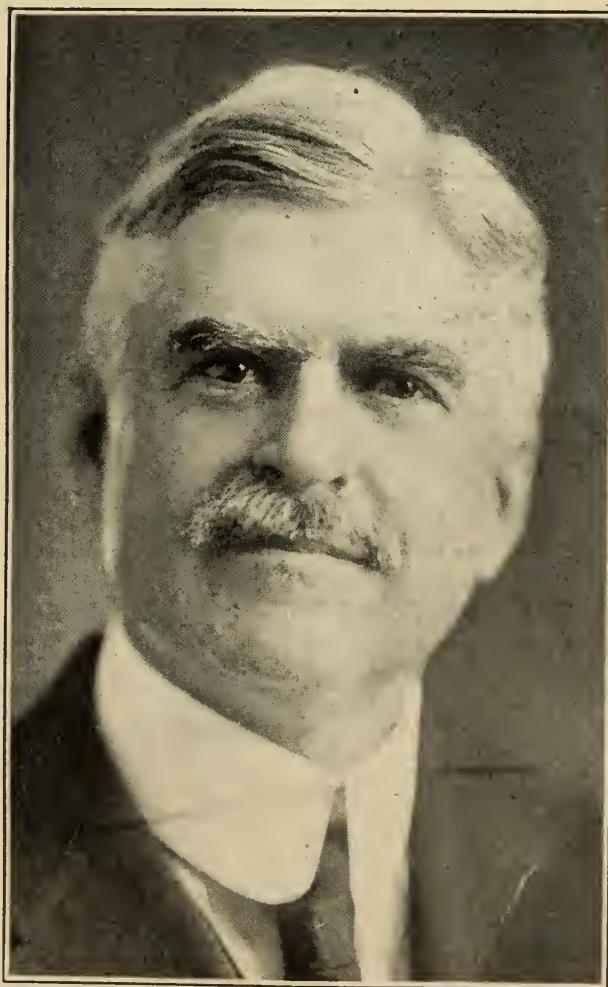
# THE MINING CONGRESS JOURNAL

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No. 8



GEO. S. RICE

Chief Mining Engineer of the Bureau of Mines, whose discussion of government war work appears in this issue.

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# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## THE LABOR SITUATION

At no time in the history of the United States have there been so many labor disturbances as at the present time. At no time has there been greater need that every citizen of this republic shall perform in full, that service of which he is capable. At no time has there been greater need for some form of compulsory arbitration through which the processes of industry shall be continued, and the disputes of contesting parties settled, as all ordinary disputes are settled, by Courts of Justice, charged with the responsibility of dealing fairly between the parties.

## SLACKERS

The State of West Virginia has very properly provided that in these days of stress every able bodied man shall be engaged in some kind of productive labor. Its example might well be followed by the nation. It would certainly be less onerous to draft the man who shirks into that service for which he is fitted by experience and training, and perhaps by choice, than to take a man from such occupation and put him in the Army and the Navy. Capital and Labor alike should be conscripted in order that the nation may, in its present great emergency meet the situation effectively.

## THE COAL SITUATION

One of the greatest problems facing the American people today is the production and distribution of a fuel supply

which will meet the needs of industry and domestic use, and the demand of our Allies for fuel in the conduct of war. Increased prices paid for wages in coal production are not resulting in an increase of production. In many instances the habit of earning a certain amount of money and then quitting work is enabling the miners to earn the required amount, in less time and by the production of fewer tons of coal. This results in a decrease in the amount of coal produced. One of the problems which the Fuel Board will need to face in the near future, is to devise means by which the average miner may be induced to produce the very largest amount of coal possible, in order that the needs of the country may be met. It is not a question of hours, nor a question of wages; the supreme requirement is production, and no slacker in the ranks should be tolerated.

## GIVE BUSINESS A CHANCE

It seems very important that there should now be a pooling of the forces engaged in the production, transportation and exchange of the Nation's resources. Great danger however exists, in the arrangement looking to the proper pooling of these resources, that new agencies will be created entirely unfamiliar with the problems in hand and that as a result instead of stimulating production and facilitating distribution we shall have bunglesome management which interferes with the entire process of business.

The present processes of industrial life are the concrete results of the best



practical experience of the business men of the nation during its more than one hundred years of progress from an isolated colony to the greatest industrial and commercial nation in the world. To interfere with this system unnecessarily at this time will be little less than criminal.

The Sherman anti-trust law should temporarily be abolished and cooperation among the present business units of the country should be permitted under proper government supervision. This will utilize the business judgment and experience of the men who have made the nation great in those lines in which they have had wide experience. To attempt this through government boards is not reassuring at this time to the business men of the country in the face of the Goethals-Denman and the Lane-Baker controversies.

By all means give business itself a chance to cooperate in order that without restriction it may serve the Nation's present need.

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## GOVERNMENT POOL

### PROPOSAL UNWORKABLE

When the Federal Trade Commission recommended that the production and distribution of coal and coke be conducted through a pool in the hands of a government agency, it urged the adoption of a plan which is impracticable and unworkable. Such a pool well may be compared to a high powered automobile with a poor steering gear and no brakes. The great car has been beautifully enameled and unholstered by its maker. There is no question about its being able to develop lightning speed, but since it can not be guided accurately, and once started can not be stopped, it is a menace to itself and to the public.

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## TREASON.

In a war in which the farmer, the miner and the soldier are practically equal it would seem that all should be dealt with by the same process of law. It is just as important that the miner shall produce the minerals and the fuel, that the farmer shall produce the food as

it is that the soldier shall fight in the trenches. Under these conditions, why should that part of the force which faces no danger be permitted to desert with impunity while the part which has dangers to face is shot in case of desertion. Under present conditions all industrial disputes should be settled by arbitration and strikes should not be permitted. World demands are abnormal, and there should be no cessation of production. Personal liberty as compared with our fellows should not be sacrificed, but there is no such thing as personal liberty which is not subject to the call of one's country's defense. It is the duty of every loyal citizen to aid in the game of production. This is no time for slackers. Slackers in the industrial army are very similar to deserters in the military army. Perhaps there is a difference, but this difference will only be presented and emphasized by those cowards who are anxious to shirk their real duty to the nation.

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## THE DEATH OF HIGH GRADING

The recent conviction of a band of conspirators, who have been robbing the Cripple Creek mines of high grade ores for many years, is one of the closing chapters of a drama which has been on the stage for many years. High grading (the stealing of very rich high grade ore from the mine) has been the cause of very much of disturbance for many years. The Cripple Creek strike in 1904 and the Goldfield, Nevada, strike of a later date, were based upon the demand by the miners of conditions which would permit this practice. At one time it was believed that at least one million dollars each year was stolen from the high grade gold producing mines of the Cripple Creek district. Many people are being given credit for the recent conviction in the federal court at Cheyenne, Wyoming, but the one man, who like a nemesis has pursued these high-graders, in season and out of season, and who is entitled to the credit of these convictions, is Judge E. A. Colburn, of Denver, Colorado. Judge Colburn was the President of the Cripple Creek Mine Operators

Association during the great Cripple Creek strike, and now hale and hearty at the age of seventy-four years, has just witnessed the successful termination of his fifteen years' work to put an end to a system of robbery, which has been the curse of every high grade ore producing camp in the world.

## THE OIL FLOTATION MONOPOLY

When the United States Supreme Court rendered its decision sustaining the patents of the Minerals Separation North American Corporation, covering certain phases of the oil flotation process, it was hoped that this company would establish a liberal policy for the control of such rights as were upheld by the Supreme Court. This course would have given the company magnificent remuneration and at the same time permitted the general use of this process in the saving of mineral values. Instead, however, the company, in addition to an exorbitant and inequitable royalty, has established requirements so onerous as to make the use of the process practicable prohibitive.

First. It absolutely refuses to deal with those companies which have been experimenting in the development of the many oil flotation processes until such companies have settled in full its demands for alleged patent infringements.

Second. It demands that its licensees shall give it the full benefit of any invention or discovery made by them which may be an "improvement, modification, or addition" or "may be useful in carrying out any of the processes thereby protected" and the right to patent for its own use any invention made by its licensees and further requires its licensees to "bind their employes to assign or transfer to the licensor any invention made by such employes."

Third. It requires its licensees to pay a royalty "in each and every instance *computed on the entire metal values recovered* from all ores and material treated by the licensee provided any portion of such value has been recovered by flotation.

These requirements give evidence of an intention to establish an outrageous

and never ending monopoly which will excessively burden the mining industry.

The validity of the claims of the Minerals Separation Company was bitterly contested. The United States Circuit Court of Appeals denied their validity. The contrary decision of the United State Supreme Court has not received the general approval to which its decision should be entitled. The present perfection of the process has been contributed to by many different experiments carried out in different parts of the country. The developments made through these experiments have made the process workable and of great importance in meeting the nation's great present requirements. The production of the mines—coal, copper, lead, zinc, and many other metals are absolutely essential to the conduct of the war. The power of the government to commandeer supplies when necessity requires it, the power to fix prices, the power even to impress its citizens into service, whether military or civil, is a part of its sovereignty. These rights being acknowledged, it must follow that the right to control exists wherever and whenever the less drastic authority will serve an equally important purpose. Personal rights and the rights of private property have little standing when the existence of the nation is in jeopardy. Society must preserve its own existence because all rights of title depend thereon. A nation need not wait until actual jeopardy exists—whenever a sacrifice of the rights of an individual is plainly required for the well-being of the body politic, that sacrifice must be made.

When it is necessary, the government would be justified in dictating what a monopoly created by itself shall charge for a service which is essential to the production of necessary war materials.

Three methods are available to meet this abnormal situation:

First. That the Minerals Separation Company shall immediately adopt a liberal policy by the fixing of a fair and justifiable charge for the use of its process and the relinquishment of its apparent purpose of establishing a continuous and burdensome monopoly.



Second. That the government through the Council of National Defense, shall fix a reasonable charge for the use of the process.

Third. That Congress shall annul the right granted by the patent.

It is hoped that one of these plans will be adopted at the earliest possible moment in order that the production of lead, zinc, and copper, so essential in the prosecution of the war, shall not be unduly hampered.

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### ALASKAN COAL AND THE PACIFIC FLEET

The country at large is fretting considerably because of the confusion in the management of national affairs at Washington which have special relation to the present war conditions. The common sense of the nation, however, fully appreciates the fact that the nation is grappling with unusual problems, and problems of a magnitude never before contemplated. It therefore expects that there will be much of hesitation, and that perhaps some errors, even blunders may be made. The country is prepared to excuse and palliate such errors as may be made, to bear the consequences with patience, and to stand by the administration and condone all mistakes made in new conditions and without ample time for a careful examination of all the facts. The country is not so well prepared to overlook blunders, long continued and premeditated, and for which there can be no possible intelligent excuse. Just at this time the Government of the United States is shipping one hundred cars of coal weekly, by rail, from the Atlantic to the Pacific seaboard, a distance of three thousand miles of railroad haul at an expense of \$8.59 per ton for transportation, in order that its Pacific Coast Naval requirements may be cared for. At a time when there is a general feeling of unrest because of the belief that the railroads of the country will be unable to deliver coal from the mines to meet the great industrial requirements of the great centers of the east; at a time when the demands of our Allies in the great war are demanding

coal more rapidly than the railroads are able to deliver to the seaboard for transportation; at a time when there is threatened to be a great congestion of railroad traffic, because of the extraordinary movement of food products in order to supply our own people and meet the needs of the Allies, this enormous amount of transportation service is being used by the Nation in order to supply the Pacific Coast requirement of the Government, when upon the Pacific Coast, in the Territory of Alaska, are mountains of coal of both high and low grade, which is not being mined because the Government of the United States will not permit it to be mined under reasonable conditions. At the time of the enactment of the Alaskan Coal Leasing Bill, it was freely predicted that no coal mining could be carried on under its conditions. Notwithstanding this fact, those having the matter in charge worked the best part of a year, in devising a form of contract more restrictive than the law itself. This law has been in effect nearly three years. We understand that there has been but one effort to operate under its conditions, and that resulted in failure, and that the Government has now taken over the lease, and is undertaking to operate upon government account. It also is understood that the administration is proposing to undertake the opening of a mine on tract twelve in the Matanuska Coal field because no practical coal operator has been found willing to undertake operations under the onerous provisions made by the government. During recent months responsible parties have been in Washington begging of the Department to so amend the lease, as to make it possible to induce capital to undertake a coal mining enterprise in Alaska. The lease has been amended, not by making it more liberal, but by making it more restrictive. In the present crisis, the silly effort of those administration officials who with wise demeanor prate about the conservation of Alaskan coal, is worse than ridiculous; it is a crime, it is costing the nation on the basis of one million, five hundred thousand dollars annually in freight charges. It is taking coal from the in-

dustrial centers where its lack will be keenly felt and is directly contributing to one of the greatest dangers which is imminently facing the nation. A future issue of the MINING CONGRESS JOURNAL will name some of the boneheads who are responsible for the tying up of Alaska's coal resources and who still persist in the inane policy even in the face of the present war emergency.

## CURRENT FEDERAL LEGISLATION

The total number of bills introduced in Congress during the present session is 8222, besides 231 Resolutions. Of these 5,531 are House Bills and 2,691 Senate Bills. But few bills of importance to mining interests have been introduced since our last report.

H. R. 3,932, reported in a previous issue providing for the regulation for the sale, manufacture, distribution, storage, use and possession of explosives during the period of the war, was passed by the House and was referred to the Senate Committee on Mines and Mining. The Senate Committee has reported favorably the bill but makes various amendments and additions thereto. The bill as amended provides that the director of the Bureau of Mines may issue license to the citizens of the United States or to the citizens of countries at peace with the United States only on the following lines:

(a) Manufacturer's license, (b) vendor's license, (c) purchaser's license, (d) foreman's license, (e) exporter's license, (f) importer's license, (g) inventor's and investigator's license.

It also provides that any person authorized to sell, issue or dispose of explosives shall keep a complete itemized and accurate record of all transactions.

It is provided that the bill shall go into effect sixty days after its passage. The bill is now upon the Senate calendar for third reading, and its final passage is probable in the near future.

H. R. 5011, by Congressman C. B. Smith, provides for the creation of a United States court of patent appeals, with jurisdiction to hear and determine appeals and writs of error from final judgment and decrees in the district courts of the United States in cases arising under the laws of the United States relating to patents for invention.

H. R. 5428, by Congressman Raker, provides that nurses or assistants with the Red Cross in the military or naval forces of the United States shall be exempt from the provisions of law requiring \$100 worth of assessment

work to be done upon each mining claim annually.

S. J. Res. 78, by Mr. Shafroth, provides for the suspension of the requirement that not less than \$100 worth of labor shall be performed on mining claims during each year as to all owners who, in lieu of such assessment work, expend the sum of \$100 in raising or manufacturing of products necessary for the maintenance of the army, navy, or people of the United States, or shall perform twenty-five days of labor in any beneficial occupation, or pay into the Treasury of the United States \$100. This resolution was passed by the Senate and by the House referred to its Committee on Mines and Mining.

## COAL, PHOSPHATE, OIL AND GAS LEASING

The provisions of S. 45, by Senator Walsh, providing for the leasing of coal, oil, phosphate, gas, potassium and sodium lands upon the public domain, have been offered as an amendment to Senate Bill 2463, known as the food supply conservation bill.

## MINING CLAIM ASSESSMENT WORK

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,* That the provisions of section twenty-three hundred and twenty-four of the Revised Statutes of the United States, which require that on each mining claim located after the tenth day of May, eighteen hundred and seventy-two, and until patent has been issued therefor, not less than \$100 worth of labor shall be performed or improvements made during each year, shall not apply to claims or parts of claims owned by officers or enlisted men who have been or may, during the present war with Germany, be mustered into the military or naval service of the United States to serve during their enlistment in the war with Germany, so that no mining claim or any part thereof owned by such person which has been regularly located and recorded shall be subject to forfeiture for nonperformance of the annual assessments during the period of his service or until six months after such owner is mustered out of the service or until six months after his death in the service: *Provided,* That the claimant of any mining location, in order to obtain the benefits of this resolution, shall file, or cause to be filed, a notice in the office where the location notice or certificate is recorded, before the expiration of the assessment year during which he is so mustered, giving notice of his muster into the service of the United States and of his desire to hold said mining claim under this resolution.

Approved, July 17, 1917.

## FUEL CONSERVATION

The Food and Fuel Conservation Bill, H. R. 4961, has passed both House and Senate, and at this writing is being considered by a conference committee. Its final form is looked forward to with intense interest by the coal mining industry.



### NEED FOR MORE BOXCAR LOADERS IS DEMONSTRATED

In order to take full advantage of all available cars, great numbers of additional box car loaders should be installed at bituminous coal mines. This conclusion is very evident from the returns made to the recent inquiry sent out by the United States Geological Survey. Practically complete returns have been received which show that there are only a few more than 300 box car loaders in the entire United States.

While it rarely is desirable to use a box car when a coal car is available, experience has shown, even in normal times, that coal cars cannot always be secured. At such times, it is highly desirable that box cars be used. This is accentuated during prolonged periods of car shortage, such as has been experienced since the outbreak of the war. At the present time, particularly, every effort is being made to increase car efficiency. In order to do this, the movement of empty cars must be held at the minimum. For this reason railroad officials have not been willing to restrict the use of coal cars to coal. While they have enforced the regulation to load empty coal cars toward the mines they have not always felt themselves justified in rushing these cars back to the loading point as empties.

While many mines have been suffering from a dearth of coal cars a considerable supply of box cars has been forced to travel empty along practically the same route that the coal shipment was to follow. By increasing the number of box car loaders, advantage can be taken of this class of equipment, the shipment of coal expedited and greater car efficiency secured.

In some cases it has been found profitable to load coal in coal cars at the mine, haul them to the nearest loader and transfer the shipment to box cars. Francis S. Peabody, the chairman of the Committee on Coal Production, is urging the increased use of box cars where the regular coal equipment is not available.

### FELDSPAR NOT REGARDED AS PROMISING POTASH SOURCE

Potash-from-feldspar plans do not arouse enthusiasm at the Geological Survey. The problem of securing potash from feldspar has been the source of close study by some of the Survey's geologists. Even in the domestic deposits which carry the highest percentage of potash, the run-of-quarry product hardly can be expected to yield more than seven per cent potash.

### PLATINUM INDUSTRY REPLIES PROMPTLY TO OFFICIAL INQUIRIES

That the government may expect full cooperation from the platinum industry is made certain by the prompt manner in which replies were sent to the Geological Survey to

### PERHAPS IT WAS WRONG



*Reproduced from the New York Herald*

### BUT THINGS HAPPEN VERY SUDDENLY OUT WEST

the recent inquiry as to existing stocks of all forms of platinum. Platinum refiners, in order that imports may be equitably and safely distributed have perfected a national organization which will engage in other useful activities as well.

### New Publications

The Bureau of Mines has the following publications ready for distribution:

Coal-mine fatalities in the United States, 1916, compiled by A. H. Fay. 1917. 42 pp.

Bulletin 119. Analyses of coals purchased by the Government during the fiscal years 1908-1915, by G. S. Pope. 1916. 118 pp.

Bulletin 143. Abstracts of current decisions on mines and mining, reported from May to August, 1916, by J. W. Thompson. 1917. 72 pp.

Technical Paper 87. Methods of testing natural gas for gasoline content, by G. A. Burrell and G. W. Jones. 1916. 26 pp., 7 figs.

Technical Paper 106. Asphyxiation from blast-furnace gas, by F. H. Willcox. 1916. 69 pp., 8 pls., 11 figs.

Technical Paper 165. Quarry accidents in the United States during the calendar year 1915, compiled by A. H. Fay. 1917. 77 pp., 1 pl.

Technical Paper 168. Metal-mine accidents in the United States during the calendar year 1915, compiled by A. H. Fay. 1917. 114 pp., 2 figs.



## SMOKELESS COAL OFFERED GOVERNMENT UNRESERVEDLY

### Will Abide by Any Allotment Federal Officials Choose to Make

Three hundred eastern coal operators on tidewater railroads, many of whom mine smokeless, or low volatile coal, which is especially suitable for Navy and transport use, met in Washington recently at the call of Chairman Frank S. Peabody of the Coal Production Committee of the Council of National Defense to expedite the Government's supply of coal and to provide means by which their other customers can be provided for. They were addressed by Secretary Daniels and by Commissioner William B. Colver of the Federal Trade Commission and passed resolutions expressing their willingness to abide by such allotment of Government and other contracts "as may be made by the Cabinet officers who are members of the Council of National Defense, or such agency or agencies as may be designated by lawful authority respecting coal for Government use."

It was pointed out by Chairman Peabody that the special needs of the Navy, and the two million tons of transport coal that is immediately needed—which is only part of the eight million tons of bituminous and anthracite coal that, Daniel B. Wentz of the Coal Production Committee said, is now needed by the Government—require that the burden imposed by the Government upon a few operators be shared by all.

Three resolutions were passed by the operators, accordingly.

The first of these provided that the special state committees previously appointed from most of the coal states, and new committees also of seven members each to be appointed in the states not already represented, shall supply to the Committee on Coal Production detailed information to be used in formulating a plan of "equitable distribution of any burdens or hardships that may be put upon operator, shipper or consumer in the working out of this plan."

The second resolution provided that the Coal Production Committee shall "check and compile this data and advise as to the equitable allotment both as to the various Government grades of coal to take the place of the coal withdrawn for the use of the Government."

The third resolution is as follows:

"That we reserve all rights of appeal to the Court of Claims. We accept such allotments as may be made by the Cabinet officers who are members of the Council of National Defense of such agency or agencies as may be designated by lawful authority respecting coal for Government use, and necessary adjustments between producers to equitably adjust the burden and cause shippers not supplying

the Government directly to supply their fair proportion of coal to Government shippers to take the place *pro tanto* of coal furnished the Government."

It was pointed out that any adjustments made by the President, the Secretary of War and the Secretary of the Navy are without doubt out of the province of the Sherman Anti-Trust Law.

Mr. Peabody explained that the meeting was called today because coal was imperatively needed by executive and other departments of the Government, and particularly by the Navy for vessel use and use at the training stations, and by the Army, for use of the cantonments. "On June 8," he explained, "there was a meeting on Navy coal. The final conclusion was that the operators would furnish any coal that the Government wanted, whether the price was fixed or not, by such times and in such quantities as the Government wished. Nothing was settled on the price except that the Secretary of the Navy stated that he would advance \$2.333 a ton on the shipment of each gross ton. That was simply a tentative price. The final price, it was stated, would be made after the Federal Trade had made its reports. In the meantime a committee of seven consisting of Paymaster Hilton, who is familiar with Navy coal and its mining, Mr. Bookwalter and representatives from the Pocahontas, New River, George's Creek and Central Pennsylvania fields, was appointed. This committee was never completed and Paymaster Hilton at last allotted the coal as he thought it should be distributed."

The question of price was not discussed at the recent meeting and it was assured by the operators that no price settlement would be made until the report of the Federal Trade Commission is made.

Commissioner Colver pointed out that the Federal Trade Commission would not determine the selling price of coal but would report solely on costs. "I don't think," he said, "that the Federal Trade Commission will set a single price during this war. I think we will try to keep our minds perfectly clear of that factor represented by profit."

The operators were assured by Commissioner Colver that, "in his judgment," none of them would suffer any unfair loss by working in complete accord with the Government and trusting to Federal settlement of price and profit. And Mr. Peabody pointed out, "There is no question in my mind that payment for your coal will be fair and just." He said that the more intercourse he has with the Government officials the more he is convinced that there is no desire by any one to take advantage of any operator, business or other man.

Secretary Daniels said:

"We have witnessed in recent days rapid and wonderful changes. During all the months of more than two years the fate of this nation was in the minds of us all. Then the day came when the issue had to be met. There was but



one way to meet it, and in a moment, with only a few hours of debate almost by acclamation, the hundred million people of America spoke as one man for the protection of American citizens on land and sea.

"I am one of those who believe that all Americans have their heart in the struggle we are engaged in. There is no division. Now, don't understand me to say that there is no one in America out of harmony, but the number of them is so small and their influence is so little that when one raises a voice against governmental decree his punishment is so swift and sure that if there be others they are silent. The Congress authorized an unprecedented issue of bonds. There were American bankers who doubted whether the American people would rise and subscribe to those bonds. The bonds were oversubscribed. And in the face of that the Red Cross raised over a hundred million dollars to alleviate the sufferings of war.

"The traditions of this people have been against compulsory military service. For a hundred years this had been the spirit and belief of a major portion of Americans. Yet when the hour came when a new policy was demanded if the United States was not to be overwhelmed, the selective draft was put into operation, and more than ten millions of young men came forward and wrote their names on what will be called the roll of honor. And the achievements and the sacrifices they make will add a new chapter to the glory of American history.

"There are no sacrifices demanded that our people have not made. Yet we are only at the beginning of our sacrifices. No nation was ever welded until it had suffered. No friendships are so strong as those consummated by sacrifice. Every man is going forward and putting on the altar of his country all he is, all he possesses—aye, and the young men in France are offering all their future and all that they are and all in which they believe.

"I do not speak of any class of Americans now, because there is but one class. We are but of one life in a country together. No man owns a coal mine or a railroad now. He is but the trustee of his property for America. Recently you saw we had two conferences with a committee from the Steel and Iron Institute and discussed one problem. And there is but one problem—that is the problem of distribution."

Mr. Daniels said that the representatives of the great steel industries had met the representatives of the Government in a spirit of "hearty Americanism."

"They determined," he said, "that every pound of steel in America and every ton of iron should be at the service of the Government, to be used for our own Government, for the allies, and for whatever purposes should be necessary to win the war. And as to price, after some conversation about it, it was agreed that this is no time to discuss profits. This is a time to discuss distribution,

they said, and we have faith that the Government experts will be fair and just to us, and that when we hand over to the Government all the product of our brains we shall have a reasonable and fair profit.

"The question here is a question of distribution. That is the question everywhere. In the navy, even, the problem is one of distribution. We have not enough trained men to man our increasing navy. Our problem is to distribute officers to the navy, to the navy yards, to the training camps. That is the problem in Congress—how to distribute the problem of taxation. That is the problem everywhere. Mr. Peabody and his committee are laboring to help you solve it.

"I sometimes wish that we could get the conception into the minds of all Americans that the Government is not something removed. Most of us think of the Government as a separate entity—something that doesn't concern us. I wish we could feel every minute that the Government is ours, and that when we are serving the Government we are not serving some separate entity, but ourselves.

"We shall need more coal this year than ever. We shall need it for our navy patrolling the coast from Halifax to the southernmost part of South America, traveling more miles this year than it has traveled in a decade. We shall need it for carrying troops to France—tens of thousands, hundreds of thousands—aye, we may need millions of men to fight until we have achieved a victory. And not one man can go across the ocean unless our ships have coal and oil, and most of them use coal.

"It is to you operators that we look for this distribution. We shall call upon every man to bear his portion of the burdens. Every man must respond. Some men call it sacrifice. I do not so regard it. I regard it as a high privilege that men who own the primary necessities can hand them over freely and in a large spirit. I call it a privilege to serve. Every man who has the opportunity to sacrifice to win this war should call it a privilege. So I came today not to urge you but invite you to this privilege—the privilege of giving even your lives to this war; for if this war should last long no age limit will stand between a man and the trenches."

## SURVEY ISSUES WEEKLY

### COAL PRODUCTION STATEMENT

In an effort to make mineral statistics available to the public at the earliest possible date, in 1909 the policy was adopted by the United States Geological Survey of giving to the press the first of the year figures covering the production in the United States during the year just ended of the principal minerals, such as copper, lead, zinc, iron, coal, petroleum, cement, gold, silver, etc. Further carrying out this policy, in 1915 statements discussing the production of the principal minerals for the first half of the



year were issued on July 1, and have been continued annually since.

Since July, a year ago monthly statements have been\* issued showing the movements of coal by the principal coal-carrying roads and this is now being supplemented by issuing in addition to the monthly statement of shipments a weekly coal production statement, with discussion of causes of amount of production below full-time capacity.

Since January 1, last, the Survey has also issued a monthly comparative summary showing the movements of petroleum from field sources.

### **BISBEE URGES THAT TROOPS BE KEPT IN COPPER REGION**

Bisbee, July 21.—All possible pressure seems necessary upon Washington to have copper considered major utility. This alone will keep troops. Without troops, Globe, Miami, Clifton, Morenci face serious trouble on August 1. Efforts will doubtless be redoubled to make trouble at Ray, Superior and Douglas. Telegrams should be sent all persons of influence and understanding at Washington and to Governor Campbell.

It is suggested by way of preparedness, Globe, Miami, Jerome, Clifton, Ray, quietly send reliable committees from Workmen's League and Protective Associations to Bisbee to get full inside view of all work here and how carried out and be better prepared, more enthusiastic, for complete organizations in their camps to meet emergencies of troops withdrawn August 1.

Suggested that different Protective Associations and Workmen's Leagues appeal to governor in strong communications asking that they be deputized under Bisbee plan and that deputizations by sheriffs have state wide scope, thus providing strong organization in each county of men known to be loyal, whereas state reserve call would include many disloyal I. W. W., making less reliable, more unwieldy body for quick assemblage at any given point in state. Too much stress, it seems cannot be put upon need for immediate preparedness in fullest possible measure for protection of home camps by loyal home organizations. This plan would also avert drawing of many men from work and home communities, where needed, to serve in state reserves.

The situation in the Warren district presents these prominent features: No semblance of remnant of strike; men remaining since the clean-up working together as never before; feeling of brotherhood exists exceeding previous ties of unionism; men are in closer harmony with managements than ever before; feel that it is up to them to keep all disturbers and bad influences from among them. Politically it is the death knell to radicalism in state, county and municipal politics. It will be felt over the State both as affecting employment and government to

high advantage. Believed that with care in handling it will revolutionize conditions in state and minimize danger of labor troubles for many years.

Mines of Warren district have over 70 per cent former normal forces underground; surface is near normal. Investigating Committee Citizens Protective Association examines all men seeking work. If found with clean records they go to Workmen's League committee for final examination. If passed, they get rustling cards. Every care is taken to see that no bad ones slip back. Men unable to produce satisfactory credentials are told the time of leaving of next train. It is seen that they go aboard. No resistance has been met. Suspects watched since deportation day are taken before examining committee daily and if not passed are told to take next train, and do. Committee captured I. W. W. membership list in I. W. hall day of raid. It has been of great assistance. Watching of trains and autos is to be continued permanently. Passport system has been adopted, passports issuing from Douglas Chamber of Commerce. Stage lines require these. Many I. W. W. unable to get in here are roving state. Close watch and immediate application vagrancy laws with enforced labor is urged at all junction points.

Information is that if demand for recognition of union should be dropped at Globe a speedy settlement might be made. Matters seem moving toward dropping demand, but news of troop withdrawals August 1, as now proposed by government, will probably disrupt this trend. It would be possible, were demand dropped, to put back only loyal Americans. Clifton and Morenci report no change. At Jerome, tabling of strike demands appears to be permanent for period of war. McCluskey is still there, however, and a menace wherever he is. Donnelley was at Douglas this week stirring up crafts to strike. Gave false name, claiming to be traveling man, and managed to get into Bisbee on stage for conference Rosa McKay. Donnelly arrested Phoenix Thursday but will furnish bond and continue activities. Is worst one loose in state today. Officers here had planned to catch and deport him, to Columbus. Douglas electricians and carpenters turned his strike proposals down. Rest of crafts met last night and are understood to have followed electricians and carpenters action. However, efforts are continuing in the town. The latter is ready to follow Bisbee plan the instant strike is called. Press comment over country has commended Bisbee action and denounced strikes in Arizona generally. Should be helpful in getting Washington to change attitude regarding removal of troops.

W. B. Shackelford, Webb City, Mo., formerly a director of the American Mining Congress, was in Washington last month on matters pertaining to the lead and zinc industry.



## RICE TELLS OF PROGRESS OF GOVERNMENT'S WAR WORK

### Says Much Preparatory Work Has Been Done Quietly in Washington

Replying to criticisms of the manner in which the war work is being handled by the Government departments and by the Council of National Defense, George I. Rice, chief mining engineer of the Bureau of Mines, offered the following information at a recent meeting of the Mining and Metallurgical Society:

"I feel a little doubtful about saying very much about the situation at Washington, and yet as I am apparently the only man here who is connected with any one of the bureaus, it is perhaps well to throw what little light I can from my limited knowledge of the war preparations, and it may be it will develop at least some points for discussion.

"To those of you who perhaps do not know much about the scope of the work of the Bureau of Mines, with which I am connected, it might be well to explain so you will understand my viewpoint. The bureau, which is in the Department of the Interior, has five divisions—(1) mining investigations and safety measures, (2) metallurgy, (3) fuels, (4) mineral technology, and (5) petroleum. Such information as I have is that derived from being in charge of the work in the first-named division. I may add that until recently Congress has not appropriated funds for metal mining to any extent, except on the accident side, so that whole stress of the bureau's investigations in underground work has been laid on the accident side.

"Now, with this preliminary, I am going to talk to you rather as an individual than as an official. Necessarily, without prying into things, one picks up considerable information and gets different viewpoints by hearing what others say. I have been away from Washington for some days, and haven't had the opportunity to read what was said at the previous meeting regarding the relation and work of the mining engineers and the metallurgist to the Government.

"I believe there is a great deal of good work going on quietly for preparedness, both in and out of Washington, among scientists and engineers, which does not appear in the newspapers and journals.

"It became quite apparent to Director Manning, of the bureau, some time ago that there was need of having the names of the engineers, metallurgists and chemists of the country properly listed and grouped. That need was brought home to the bureau from many sources, inquiries from the War and Navy departments and Advisory Committee, so with the approval and help of the respective national societies it hurriedly prepared

and sent out forms to every known mining engineer, metallurgist and chemist, containing detailed inquiries. The thought was not primarily to find out the availability of technical men for military service at the front, which some supposed and consequently criticized, the age of each man was merely incidental information. The statistical work has been very great, and Mr. A. H. Fay, the bureau's statistician, and who is a mining engineer, formerly connected with Mr. Ingalls' journal, has had to turn his entire statistical force—not a large one—in addition to some field men from my division, on this work; and he is very nearly overwhelmed by the magnitude of the job of classifying many thousands of names. The intention is to classify every man by his various experiences, which means, in some cases, that his name appears in six or seven different card indexes. So this makes a general directory for the technical men of the country, and I may say it has been very useful already; for example, in getting explosive chemists, of whom there aren't so many, for the Bureau of Mines and the Bureau of Ordnance.

"In the War Department I hear there has been a great deal of difficulty on account of more or less necessary formality in getting men from private life appointed as reserve officers. One of the chiefs in the Ordnance Bureau referred to the fact that he was in touch with a large number of chemists who were very anxious to do their 'bit' to come into that bureau, and he was very anxious to get them, but there were delays due to the civil service requirements, although the Civil Service Commission was well disposed.

"Speaking as a private citizen, I think the country has shamefully neglected military requirements during the last two years, when we ought to have been preparing thoroughly. Last January some of the Government bureaus, including the Bureau of Mines, undertook an internal census or review of what each might be able to do in the event of war. In the case of the Bureau of Mines the plans and suggested ideas thus gathered were submitted by Director Manning to the National Research Council through Dr. Walcott, chairman of the Military Committee.

"Now, one of the things in which I was deeply interested was an inquiry regarding gases. As may be some of you know, the bureau has given a great deal of attention to the question of self-contained breathing apparatus and the physiological effect of mine gases, and I think perhaps the bureau in these matters has, through its advantages, been in the lead. Prior to this, from time to time, representatives of the bureau have been called in for consultation by bureaus of the War and Navy departments.

"The National Research Council approved the research into gases, following the declaration of war on Germany, and a main committee was appointed, the director of the Bureau of Mines being chairman, and having on it representatives of the army and navy.



The committee included some prominent chemists from private life. This committee then appointed a well-known gas chemist, formerly connected with the Bureau of Mines, to take charge of the investigations, with other prominent chemists and physiologists, including the consulting physiologist of the bureau. Many of these men gave up important positions to take up this Government work at either no salary or a nominal salary. The committee is taking up the whole subject of noxious gases for offensive and defensive warfare, which embraces the development of gas masks and all things which go with it. When this working committee had been organized my duty in that matter had been done beyond cooperation in testing masks, etc.

"Many of the universities and technical schools have offered the free services of their chemists and laboratories, and as the bureau had limited funds, excepting what were specifically allotted, this has had splendid results, as otherwise little could have been done for months until after appropriations had been made to the military branches, and that delay might have been serious. Through these offers a large number of chemists in all parts of the country are at work—over a hundred chemists and physiologists, the last I heard—and other men who were specializing in certain things. It is perfectly evident that all work has to be handled very secretly and quietly, so that to separate groups of men separate problems are being parceled out, and the final result will be known only to the army and the navy.

"In connection with the use of noxious gases in warfare, I was very much interested in conversing with some members of the British Commission sent over here, and from them and also from other sources I learned of the extensiveness of the technical research and organization required since the gases were first introduced by the Germans in warfare.

"A prominent medical officer described the first attack when gases were first used on the front by the Germans in 1915. It happened in his district, and he spoke of some of the horrors of strong men, chiefly Canadians, coming back clutching at their throats, foaming at the mouth, and dropping down at the roadside. When the gas cloud first came over they thought it was a mere joke, but they soon learned to the contrary, and the effect was disastrous for a time. That afternoon they happened to capture a German who had a mask. The German soldiers had been provided with them in case the gas blew back. In fact, there is evidence many of these masks were made long before the war. On questioning the prisoner and by making such observations as he could, the officer concluded the gases the Germans had used was chlorine, and he sent out automobile parties gathering up all the cheesecloth and similar material, even ladies' lingerie, for 20 miles back from the front to make up

into masks; also getting cooking soda and other suitable alkalis for saturating the cloth. That night they had all the French women in the region working at these crude masks. These did fairly well for a very brief time, until there was time to get masks made more scientifically.

"The British government called in some of the most eminent men, among others Dr. Haldane, who, I suppose, is perhaps the leading man in the world on the subject of physiological effect of gases, and he, among many other eminent scientists, gathered together, formed a staff of civilian chemists in England, a research department, cooperating with a large staff of field technologists, because the war became more and more complicated, a game of wits. The Germans, after a while, began to vary the gases. They'd use sometimes a gas comparatively harmless and suddenly shift it to something else. Now, the earlier gas attacks were chiefly made with chlorine, which the ordinary masks, saturated with alkali, would protect against; but later on they began to use some of the more complicated gases, among others phosgeni, and then these primitive masks would no longer serve the purpose, so they have had to discard them or keep them in reserve. The British now have what they call the box mask, the box being after the order of the regenerator of the well-known mine-rescue apparatus. Of course, the latter would be far more effective, but is too heavy and complicated to supply hundreds of thousands to the troops, for every man at the front must have one, and even civilians for 10 miles behind the front should be supplied. They are constantly working to improve the masks. In the field there are chemists attached to the military staff and the different divisions, and so on down the line, until they even have men in each company who gather the samples of gases to see what changes in the character of the gases the enemy is making.

"New recruits have to be systematically trained in using the masks. A minute's delay in putting them on might be very serious. Drills are given before the troops are sent to the front in the use of masks in gas-filled trenches. In the trenches at the battle line there are signals to give notice when the gas clouds are given off by the enemy, as there is little sound; just a hissing of the gas issuing from nozzles, if it can be heard at all. The use of gases in shells is becoming more prevalent now on both sides, because, repugnant as it is, the allies have had to fight fire with fire, and some of you may have seen a British publication which has just been issued, a reprint of which has been issued by the Department of Labor, relating to the methods of handling gas-making materials in the munition plants, because some of the gases are extremely deadly. Just as an illustration, the other day in one of the laboratories they had a bottle of some gas with a glass stopper, which seemed tight,



yet must have leaked a little, and they had several men who worked in the room very sick for a while. One of them had his throat very much affected for several days. It can be said this important work on gases is, I think, in very good hands, as I think you will ultimately find out; but you will appreciate that inquiry has got to be kept very quiet, hence I have given no names. However, if any of you have any suggestions to make to any member of the noxious gas committee or to the director of the Bureau of Mines, they will reach the right place.

"Another work with which I have had a little to do, and which concerns the industry this society represents, is the question of the control of explosives other than for military purposes. My knowledge of it started as an outgrowth of a conversation I had with my friend, Colonel Aultman, until recently of the War College, now of General Pershing's staff, which was followed by a conference by Director Manning, Dr. Charles E. Monroe and myself with General Kuhn, head of the War College. The latter thought the Bureau of Mines should take charge of the matter, which had already been suggested by the Bureau of Ordnance of the War Department, because three-fourths of commercial explosives are used in mining and quarrying. Subsequently a meeting was held with General Crozier, Chief of Ordnance, at which a number of military men and representatives of the explosives manufacturers were present. There was general agreement that there should be control of explosives. Reports were coming in of cases of stealing of explosives, in some instances in large quantities, and evidently for purposes such as wreckage of bridges and wreckage of plants. Now, this country, as you know, never attempted any control of explosives, although it has been done in other countries. There were very elaborate laws issued in Great Britain in 1875, so elaborate that at the beginning of the war they only needed to make a few extensions to these and they still fit under war conditions.

"At that meeting Colonel Dunn, of the Bureau of Explosives, representing the railroads, and whose decrees are made effective by the Interstate Commerce Commission, was present. There was some little question as to what department of the Government should handle the matter. The military people didn't want to undertake it, because they had their hands full. The Bureau of Mines, on account of the testing of explosives, especially, of course, for coal mines, and also testing materials for other purposes, seemed to be perhaps the best agency. Accordingly a bill was introduced in the House as a result of that conference by Dr. Foster, chairman of the Mines and Mining Committee, and hearings were held.

"The general intent of the bill is that the President is to issue a proclamation, which applied only in time of war, to the effect that the Government will supervise and con-

trol the manufacture, distribution and use of explosives and placing the supervision under the director of the Bureau of Mines. It didn't cover the transportation, because the transportation was already covered by the Interstate Commerce Commission. The bill calls for an appropriation of \$250,000 to carry it into effect. That seems like a large sum of money, but, on the other hand, the Dupont Company stated that if they put guards at all their magazines they estimated it would cost them a million dollars a year to do so. Remember, there are 48 States and Alaska to cover, and there are probably two million persons that handle explosives more or less regularly throughout the country—miners, quarrymen, tunnelers, excavators and farmers. It is a great big task.

"The bill calls for use of the Governmental, State and municipal agencies and the employment of other persons to handle matters expeditiously. Colonel Dunn made a very valuable suggestion at that conference, which, it is expected, will be followed if the measure is carried through, namely, that in the more remote communities, as in many mining communities, that patriotic citizens be relied upon; that is to say, if it is a mine, to ask the superintendent of the mine and two or three other locally prominent men to form a committee to handle and best arrange for licensing and control of the use of explosives in their neighborhood.

"The most difficult cases to control are in the agricultural districts, because farmers are now using considerable amounts of explosives for blasting, planting and various other purposes, and there, again, the Government will have to rely largely on volunteer safety committees. It will be proposed to license all who manufacture, have possession of, and distribute explosives. Letters have passed through my hands which fully indicate the necessity of this measure. There was a letter the day I came away from the sheriff of one of the most important industrial counties in the country, saying a very large quantity of explosives had disappeared from a magazine and calling upon the owning company to properly guard it. There have been many cases of that sort, and I sometimes fear we are liable to hear from it in the future blowing up of bridges, railroads and plants.

"Another matter I may mention which will be of special interest to members relates to sources of supply for sulphuric acid. My friend, Mr. C. H. McDowell, who is or has been president of the Fertilizer Manufacturers' Association, became concerned about the scarcity of raw material for making sulphuric acid. As probably most all of you know, the great fertilizer manufacturing plants are scattered along the Atlantic seaboard, and hitherto those along the coast have relied for sources of material on the Spanish pyrite. Now, the Spanish pyrite isn't coming in. Shipping is scarce, and the British government is reluctant to let those boats returning



empty from the Mediterranean visit a dangerous zone and lose four or five days, and for that reason stocks are being depleted. According to the fertilizer people, there will be scarcity by fall if native material was not available. Accordingly, hurry calls are going out for the development of pyrite deposits in this country. It is not so much a question of ultimate scarcity, for the country has supplies, only they are either remote or require development. There are, of course, certain large sources of native sulphur in Louisiana and Texas, but it is not desirable to draw too heavily on the stocks, and prices have been going up, which necessarily affects the cost of fertilizer, and in turn raises the cost of crops in those parts of the country requiring fertilizer.

"There are other interesting questions coming up. I understand the nitrates made artificially are not so suitable for fertilizing purposes, and am told that it has not been accidental that the crops in Germany have been scant; but the fact is that Chilean nitrate, as an ingredient in the fertilizer, advances the crop two or three weeks, and this in an important question where the season is short, as in Germany. That question for this country, of course, goes back to shipping.

"What the mining engineers can do to help in a military way is a matter of general interest to this society. I discussed with one of the British engineer officers of the commission the use of tunnels for communicating trenches, but learned they were chiefly used for sapping operations; that the trench lines were advancing too fast to use tunnels. Of course, there are special uses of shallow shafts and tunnels, and then there are excavation, haulage, timbering, drainage and ventilation problems which so concern the mining engineers. He spoke of some interesting details of sapping operations and the use of explosives and gas from counter saps by the enemy. In such matters it looks to me as if there was some opportunity for the mining engineer to help. One of the men talked about having been kept out of his sapping operations for two days by gas, which, it was alleged, had been forced in by the Germans through the ground, and he couldn't get into his tunnel because he only had a hand fan and a small pipe. On the other hand, noisy machinery cannot be used, for obvious reasons.

"Referring to the proposal of Messrs. Corning and Thomson to send over a volunteer force of mining engineers and miners to rehabilitate the French mines of northern France, I had the opportunity of visiting those mines in 1908 and 1911, especially mines north of Arras and in the vicinity of Lens. Lens has been one of the largest centers of by-product coking. In 1911, when I was there, they were making use of their surplus gas to produce electric power on a large scale, using it on the canals in the vicinity for towing, and it was transmitted as far as 110 miles in the direction of Paris. It

was aimed to enlarge and extend the power lines to Paris. The farthest permanent line of advance of the Germans in the Pas de Calais field extended through Liévin, north from Arras. The latter city is south of the coal basin. My friend, Mr. Léon, formerly chief engineer of the Pas de Calais district, who has since died in London, had written me that his house and office in Arras were leveled, as was the beautiful city hall and most other buildings. The so-called international coal dust gallery and testing station at Liévin were in the hands of the Germans. The Liévin mines are now within the French lines, but probably still under bombardment. The surface plants are probably destroyed, and underground destruction in them and the mines at Lens would probably come through the blasting down of the shaft and gallery linings. Their system of mining the coal is virtually long-wall; they don't employ the pillar systems which obtain in this country. The shafts are sunk down through various coal beds, and the levels are driven at right angles to the strike; that is, across the dipping strata. They pick up the beds where they can. It is a very complicated system of folds. If the Germans do their destructive work as thoroughly when they abandon the mines near Lens as they have elsewhere, they will probably blast out the linings and let in water and quicksand. Some of the shafts were sunk through water bearing strata by the cementation process and some by the freezing process."

Mr. Johnson. Mr. Rice, you speak of gas. Has there been any attempt to use carbon monoxide?

Mr. Rice. Yes, it has been suspected this has been, and that is one of the things the chemists are busy on at the present time—to find some means of combating that by masks.

Mr. Johnson. That is one of the most deadly gases. There is only one I think I know that is effective, and that is carbonic ammonia.

Mr. Rice. I heard of a curious thing the Germans were trying to use for an absorptive—making use of the affinity of blood corpuscles for CO. It was reported that they were using dessicated blood of cattle, and the intention was to saturate that dessicated blood with water when necessary to use, and in breathing through it the CO would be absorbed. It doesn't seem very feasible, and preliminary trials in this country have not indicated that the method is effective.

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### "Story of Iron" Forthcoming

As a general basis for public understanding of the iron industry, and to serve in answering many of the questions coming to the Bureau of Mines from all sides regarding the fundamentals of the industry as a whole, a popular report, entitled "The Story of Iron," has been practically completed and will be ready for distribution in a few months.—Van. H. Manning, in the Bureau of Mines Yearbook.



## EDWIN S. BOALICH JOINS CALIFORNIA STATE BUREAU



*Photo by Harris & Ewing*

EDWIN S. BOALICH

Edwin S. Boalich, who has been connected with the Bureau of Mines for a number of years as the assistant to the chief mining engineer, has resigned to accept a position proffered him by the California State Mining Bureau. Mr. Boalich made a splendid record at the Bureau of Mines. He now goes into a field where he will have even a better opportunity to be of service to the mining industry. He is a mining engineer of ability. He is filled with initiative which is coupled with splendid balance.

Mr. Boalich's position here has been filled by B. O. Pickard, who previously was connected with the Pittsburgh station of the Bureau.

## HIGH SILVER SPURS ROCHESTER TO HEAVY PRODUCTION

Full advantage is being taken of the present price of silver by the operators in the Rochester district of Nevada. Conditions are very favorable to a large increase in production, Adolf Knopf reports after having made a geological study of a portion of that camp. Plenty of labor is available and the district has the advantage of having an abundance of electric power.

## COMMERCE COMMISSION RULES IN COAL CASE

### Rates to Central Freight Association Territory Subject of Important Decision

The cases before the Interstate Commerce Commission involving rates on bituminous coal to Central Freight Association territory have been decided. These cases, consolidated for hearing, involve: (1) the reasonableness and nondiscriminatory character of rates on bituminous coal from the Ohio mining districts to that portion of Central Freight Association territory which is described and delimited in the report as "affected" territory; (2) the reasonableness and nondiscriminatory character of rates from the Ohio mining districts and from districts in Pennsylvania, Maryland, West Virginia, Virginia, Kentucky, and Tennessee, collectively referred to in the report as the "Crescent," to certain interior cities in Michigan; (3) the propriety and reasonableness of increased rates proposed to be made effective from the Crescent to affected territory; (4) the proper relation of the rates, or the measure of the differential, to be observed between the rates from the Ohio and "inner Crescent" districts to affected territory; (5) the proper relation of rates, or the measure of the differential, to be observed between the rates from the Connellsville district in Pennsylvania and the Pittsburgh and other competitive districts in Pennsylvania; (6) the question whether or not the rates from the Pocahontas district in West Virginia to Canton, Ohio, should be the same as to Cleveland, Ohio.

Upon consideration of all the facts of record, held:

1. That the rates under attack from the Ohio districts to affected territory are not unreasonable, unduly preferential, or prejudicial.

2. That the rates under attack from the Ohio and Crescent districts to the interior cities in Michigan are not unreasonable, but that they are unduly prejudicial against the interior Michigan cities and unduly preferential of Toledo, Ohio.

3. That the respondents have sustained the burden cast upon them by the statute to justify the proposed rates from the Crescent to affected territory, and from certain districts in the Crescent to Columbus, Ohio.

4. That the adjustment of rates on bituminous coal, based upon a differential of 25 cents per ton between the rates from the Ohio and inner Crescent districts to affected territory is, and for the future will be, unduly prejudicial to the Ohio districts and unduly prejudicial of the inner Crescent districts to the extent that the differential between the said Ohio and inner Crescent districts is less than 40 cents per ton, and that



for the future it will be unduly prejudicial to the inner Crescent districts and unduly preferential of the Ohio districts to the extent that said differential is more than 40 cents per ton.

5. That (a) the rates from the Connellsville district should not exceed the rates from the Pittsburgh district to the portion of Central Freight Association territory described in the report; (b) that the Connellsville district is not entitled to as low rates as the Pittsburgh district to that portion of affected territory described in the report as the Valleys and the Cleveland territory, but that the rates from the Connellsville district to Youngstown Ohio, and points taking the same rates and to Cleveland, Ohio, and certain other points should not exceed the rates contemporaneously in effect from the Pittsburgh district by more than 8 cents and 6 cents per ton, respectively.

6. That the proposed rates from the Pocahontas district to Canton, Ohio, on the same basis as Cleveland, Ohio, have been justified.

7. That in determining the reasonableness of increased rates under a general group adjustment, in which a number of carriers participate, consideration should be given to the several lines serving the group, not alone to the line having the most favorable financial condition or which can handle the traffic at the lowest expense.

8. That the gradual extension of the Pittsburgh basis of rates to the later developed and more remote districts of the inner Crescent has been without proper consideration of transportation conditions or costs and has resulted in undue prejudice to the Ohio districts.

9. That in a proceeding of investigation and suspension, the general public has an interest; and the fact that respondents during a proceeding of investigation and suspension shift their original ground of justification is not material. The commission must give consideration to all the material facts of record.

10. That respondents in readjusting their rates in conformity to the holdings herein may not increase any discriminations now existing by reason of fourth section departures in respect of which the commission has entered no order.

11. That reparation must be denied.

### Use Permissible Explosives

In Indiana, permissible explosives are used exclusively in two mines, one of which is in Sullivan County and the other in Knox County. These mines represent a total daily capacity of 5,000 tons and are thoroughly modern. Permissible explosives were introduced when the screen-coal basis of payment was in force. The results obtained have been entirely satisfactory.—Van. H. Manning, in the Bureau of Mines Yearbook.

## EXPERIMENTAL NITRATE PLANTS TO BE BUILT

### Secretary of War Announces That \$4,000,000 of Appropriation Will Be Used at this Time

The Interdepartmental Nitrate Board, composed of Secretaries Baker, Lane and Houston, has made a report to President Wilson concerning the establishment of the governmental nitrate plant provided for in the National Defense Act. The report which is not yet and may never be available for publication is chiefly devoted to a statement as to sites available for such a plant and as to what process of manufacture shall be adopted, although the report comes to no definite decision on either point. The striking feature of the report is that the Government must spend \$4,000,000 in experimenting before it can decide intelligently how to spend properly the \$20,000,000 provided by Congress for this nitrate plant. The only constructive work done thus far in the matter is the work of the board of Army Engineers which examined about 270 sites, only eleven of which are named in the report in the following order of preference: Black Warrior River and Muscle Shoals, Alabama; Knoxville; New River, Va.; Ohio River at Louisville; Chattahoochee River in Alabama and Georgia; Cartersville and Rome, Ga.; Columbia, S. C.; Augusta, Ga.; complete steam plant for nitrate at Wheeling, W. Va.

The conclusions set out in the report are that at present no permanent plant be established and that experiments in the cyanide and synthetic processes should be conducted and that all the circumstances point to New River, Va., and the Upper Holston, near Knoxville, as places for such experiments; that \$4,000,000 should be set aside for such experiments and the question of permanent location should await decision as to experiments on cost and processes. The report sets forth that the center of nitrate consumption is in the southwest corner of North Carolina.

The arc system of making nitrates is found objectionable as requiring immense water power and waste.

Among the factors that were taken into consideration in the selection of the locations were: proximity to the center of demand for the products, such as fertilizer and munitions; the water power and the expense involved in developing it; accessibility to raw materials, such as coal, coke and lime, labor and climatic conditions.

The Warrior River would produce 79,000 horsepower for twenty-four-hour period and could be increased to 100,000 horsepower by an auxiliary steam plant during the dry season. The cost would be \$91 per horsepower for the installation: raw material is



convenient and labor conditions excellent. The time in which plant could be constructed represents a minimum as compared with other sites. Muscle Shoals would develop 60,000 horsepower at a cost of \$267 per horsepower complete installation and it would require five years to complete the improvement. The Knoxville site would produce 644,000 horsepower at a cost of \$200 per horsepower. New River, 100,000 horsepower at \$160 per horsepower; Ohio River at Louisville, 100,000 horsepower at \$95 per horsepower; Chattahoochee, 70,600 horsepower at \$100 per horsepower, and Cartersville, 35,000 horsepower at \$210 per horsepower.

The Secretary of War authorized this statement on July 16:

"By direction of the President, certain plants will be immediately constructed for the production of nitrates from atmospheric nitrogen. The plants to be constructed do not involve the use of water power, but use a process which is a modification of processes previously known. The total expenditure involved in these projects is about four million dollars. Nothing further can be said at this time about the process or the location of the works which are to be constructed. Of the total amount appropriated by Congress, namely, twenty million dollars, substantially sixteen million dollars remains undesignated as to its expenditure by the President. The Committee, consisting of the Secretaries of War, Interior and Agriculture, to which the President referred the question of the selection of a site or sites for the development of water power, has made no report to the President on that subject, but is engaged in the making of further engineering studies, and the subject is temporarily closed to further discussion by localities and communities desiring to be considered as possible sites for the plants."

#### COMMISSIONER COLVER EXPLAINS GOVERNMENT POOLING PLAN

Pooling of all coal, as suggested by the Federal Trade Commission, was explained and defended by Commissioner Colver at the meeting of the producers of smokeless coal as follows:

"The Federal Trade Commission has suggested and is urging that this coal situation be met by a pool in the hands of the Federal Government. Of course, the first answer, and the one I have heard, is that you can't put all these different coals into the same pot. All coal isn't alike. But no one has suggested that. Our idea is to create as many pools as there are qualities of coal. It is the most sensible thing to do as a business proposition. Take you men here who can produce this particular kind of coal and figure the cost of production of each one of you and the tonnage of each of you. Take all the figures—cost of production, maintenance, return for capital, and so on—take those figures and add them together and

divide by the number of tons, and say, 'That is a fair average price.' Well, it is, perhaps. But all the fellows whose cost of production is above that price are asked to get less money. I am not for that. Then there is a second alternative. Get the cost of the highest cost man; add, perhaps, a war-time profit to that, and get a figure and say, 'That is fair; we will pay that.' What about the low cost fellow, then? You are making him a present of the difference. Well, you say, get that back by excess profit tax. From whom? From him? No; from the man he sells his coal to. The man you take the excess profits from isn't taxed. You are taxing the man he sold to at such a high price as to make the excess profit.

"So I have suggested that we should take, say, fifty operators who are going to supply the tonnage required and make a survey of the exact cost of the production in each of your fifty operations and find how many tons each will produce and pay each of you then your cost and an equal, fair profit per ton, so that each man will make the same profit. I know that in that case the man with the good mines will say, 'That is taking some of my velvet away from me and giving it to the man with a mine I wouldn't be caught dead with.' That is true; but you must remember this is war. And if you apply this rule the Government will know just what it has paid for the coal; the average price. By multiplying the tonnage of each portion by the price of each portion, adding them together, and dividing by the total number of tons, you will get the average price. Merchants pool every time they buy their goods. Now, if we take all the coal of all the operations in the United States and pay everybody his full production costs and add a fair and just profit, the same profit to each, quality considered, and let the Government then pay each operator for his tonnage at his own particular price, and distribute that to the industries of the United States, to the people of the United States, and to the Government of the United States, at the average uniform price, quality considered, then you have it. Speaking for myself, I don't see why the Government of the United States should have any especial price. I can't see any difference between these beautiful buildings that we see grouped about this wonderful city and the little farmhouse out on the prairie. That is just as much a Government building as this, because it houses an American citizen, and this houses an American office holder. That is all the difference. And I want to tell you that the United States, as a whole, rich and poor together, can pay just as big a price for anything it wants as any individual in the United States can pay. That is self-evident.

"But going back to the question of allotments. If we take this coal you are going to offer today and settle with you as individuals, and each one accepts his allotment, and you others who are not called upon to



give your coal come on and fill the void in the local market, it is all done, all over, no harm done; and you can wait with perfect confidence that the United States won't cheat you. You needn't be afraid to trust the United States with a ton of coal. The retail dealer gives the washwoman credit when she needs it, and the operator certainly will turn over his coal when the Government needs it and wants it. And I know the operator will get his money." (Applause.)

## IMPORTANT GEOLOGICAL CONCLUSIONS REACHED

### Survey Makes Important Findings as to Occurrence of Manganese in Virginia

Important geological conclusions have been reached by certain members of the Geological Survey, as a result of recent studies of the mode of occurrence of manganese deposits in the region east of the Alleghany mountains. It has been shown fairly conclusively that most of the manganese ore was laid down under several types of structural associations during stages of planation of the region. During these stages manganese, originally disseminated through the Cambrian limestones and the lower Cambrian quartzite, was carried to favorable sites of deposition. There is also good reason for the belief that limestones or possibly some other rocks at higher stratigraphic horizons have also yielded deposits of ore during the same stages of planation. The exact stages of the physiographic cycle have not yet been determined fully and at least one unknown quantity is yet to be ascertained as to the conditions under which the residuum accumulated. As far as investigations have proceeded, it appears probable that most of the deposits are related to one group of planation. Further studies of the problem requiring the services of experienced Appalachian stratigraphers and physiographers now are being conducted by the Geological Survey.

Due to the fact that manganese deposits are almost invariably close to the surface, and to the fact that relatively little equipment is necessary for its mining, the Government's specialists are taking a much more hopeful view of the domestic manganese situation. In fact some of them go so far as to say that the needs of the country can be met if the necessity should arise. The deposits are small but by the dissemination of knowledge as to their occurrence, greatly increased supplies are likely to continue to be produced since the deposits are readily available and the simplest kind of sorting, picking and washing machinery can be used to advantage. There are some deposits sufficiently extensive to permit of the use of steam shovels.

## WAR MINERALS COMMITTEE OUTLINES ACTIVE CAMPAIGN

### William Y. Westervelt of American Institute of Mining Engineers Heads New Body

The War Mineral Committee has addressed the following to the engineers and geologists of the country:

The war has interrupted the supply of many minerals which were normally imported. In view of present transportation conditions, a serious shortage exists in certain materials and will soon develop in others.

Some immediate action is imperative. The first thing is to take a careful inventory of American resources. We must know where the ore deposits are, what has hitherto hindered their utilization, what methods must be used, and what equipment will be needed if an emergency demands their rapid development.

Many properties must be re-examined from a new point of view, that of present necessity rather than of normal profit. When the shortage is realized, the preliminary steps for relief should have been completed. It is a necessary and patriotic form of mineral insurance. Will you have a part in it?

Do not forget that these are war times, and that what may have been valueless a year ago may be a "life-saver" now; an abandoned copper prospect of 1913 might make a successful pyrite mine in 1917. We are fighting an autocratic enemy who knows his resources to the last pound, and uses them with most efficient organization. We have no Kaiser, so, each of us must do his share to put our Government in the same situation. The Government needs your facts.

Part of this essential information is contained in the mining reports in your files. The following minerals are of special importance: Pyrite and Pyrrhotite east of the Rocky Mountains, Sulphur, Manganese and Manganiferous Iron Ore, Lead, Nitrate, Chromite, Tin, Nickel, Platinum, Flake Graphite, Sheet Mica, and high grade Refractory Clay.

Will you submit a list of the reports (or the reports themselves, if you prefer) which you have on properties and deposits which may be of importance under the present abnormal war conditions? Give the date of the report, the name of the engineer who made it, the type of ore, the precise location of the deposit, and its relation to transportation. On request, will you loan these reports for the use of the War Minerals Committee or such appropriate department of the Government as you may specify? Reports will be held confidential if you so indicate. Can you donate a certain amount of service to the further examination of properties which may be selected as of greatest importance? Ad-



dress the War Minerals Committee, Room 4241, Interior Department Building, Washington, D. C.

The members of this committee, who have been designated by their respective organizations, are as follows:

William Young Westervelt, consulting mining engineer, chairman, representing the American Institute of Mining Engineers and the Mining and Metallurgical Society of America.

Alfred G. White, mine economist, United States Bureau of Mines.

W. O. Hotchkiss, State geologist of Wisconsin, representing the Geology Committee of the National Research Council and the Association of State Geologists.

David White, chief geologist, United States Geological Survey.

This committee has as its specific purpose the consideration of the development of a sufficient supply of those minerals of which a scarcity now exists or may develop. It is intended to promote united action by the mining and geological professions as represented by Federal and State bureaus and the mining societies, and to secure the effective service of such individual engineers and geologists as desire to be of assistance and who patriotically volunteer their services.

### **RAILROADS INCREASE COAL TONNAGE—FEWER CARS SHORT**

Reports compiled by the Railroads' War Board show that the railroads of the country in their cooperative efforts to realize in the interest of National Defense the maximum of transportation efficiency, have already effected an extraordinary improvement in the amount of coal handled.

As its first important official act, the Railroads' War Board directed that railroads should give preference to the movement of coal. The Board announced, April 26, as a reason for this ruling, that, "The welfare of the nation and the nation's defense are absolutely dependent upon an adequate supply of coal for all purposes."

Reports to the United States Government, just available, show that in June the railroads of the country hauled 750,323 cars of bituminous coal—an increase of 26.2 per cent over June last year.

That the railroads are also providing a much more nearly adequate transportation service for all classes of freight is indicated by the fact that the unfilled car orders, or what is called the "car shortage," shows a reduction on June 30, of nearly 50 per cent from the situation on May 1. The unfilled car orders on May 1, were 148,627; on June 1, they were 106,649, and on June 30, they had been reduced to 77,141.

In this emergency, when the railroads are making the utmost effort to give the maximum freight service, it is gratifying to the

Railroads' War Board to be able to report the fine cooperation they are receiving from regulating bodies and shippers in all parts of the country. The effect of this cooperation and effort is to be seen in the foregoing statement of results.

### **GEOLOGICAL SURVEY BEGINS ITS WEEKLY COAL REPORTS**

**Production to be Reported Each Seven Days—Reasons Hindering Greater Output to be Given.**

Weekly statistics showing what the soft-coal miners of the country are doing and why they are not doing more are now being collected by the United States Geological Survey under Secretary of the Interior Lane. In these strenuous times it is essential that the Government, particularly the Committee on Coal Production, as well as the general coal-consuming public, be kept informed of exactly what the mines are bringing forth, and, what is more important, what is hindering greater output of the basic product, coal.

In submitting this first weekly report to Secretary Lane and the Coal Committee, Director Smith, of the Geological Survey, states that what has been accomplished in the six weeks since this statistical effort was begun is largely due to the patriotic and prompt cooperation offered by the coal trade associations' secretaries and the operators, whether members or nonmembers of associations. These figures from all sources are reduced to a comparable basis by a force of statisticians under C. E. Leshner, of the Geological Survey, with the immediate purpose of showing what factors in each district are limiting production and shipments. With this information before it, the Committee on Coal Production is able to concentrate its efforts where the greatest stringency lies—whether, as in most localities, the trouble is lack of cars or whether it is labor shortage. The operators, realizing that their interest lies in having this information promptly available, their support of the work, although it involves additional labor on their part, has been prompt and hearty. The first figures available give comparison of the first weeks of July with two weeks of June and those furnished by the already organized trade organizations, which represent about 25 per cent of the production of the country. Some of the important producing districts, particularly Alabama, West Virginia, parts of Pennsylvania, Ohio, and the territory from Texas to Iowa, figures from which are not shown in this first statement, are being rapidly organized for this purpose, and have already furnished partial information. The weekly reports that will follow hereafter will include



successively greater tonnage and be more representative of the total.

The districts covered by this statement are distributed over a large producing area, and are indicative of what is happening in the coal mining industry. A more general idea of the total production, but without indication of the causes of the loss of working time at the mines, will be found in the monthly bulletins issued by the Geological Survey, which are based on the daily, weekly and monthly reports furnished by railroads originating more than 85 per cent of the coal production of the United States, which bulletins are in no way supplanted by these weekly studies of the particular causes hampering greater output at the mines.

For the three weeks reported the average loss was fully one-half million tons, which would indicate that the weekly output of mines of the whole country is not less than two million tons below full-time capacity. By far the greatest factor concerned in the losses was the inadequate car supply. Thirty-one per cent of the total full-time capacity of these representative mines was lost because the supply of cars at the mine mouth was insufficient. Other important causes were labor deficiency, crippling the industry to 4.5 per cent of its full-time capacity, and mechanical breakdowns within the mines, to which losses amounting to 3.2 per cent of the full-time output were attributed. No mines reporting to the Geological Survey mentioned losses because of no market for their product.

#### **MORE COAL FOR NORTHWEST TO MOVE THROUGH LAKES**

The Railroads' War Board took further steps today to induce shippers and producers to cooperate with the railroads in protecting the coal supply in the Northwest during the coming winter. The railroads engaged in the lake carrying coal and ore trade in the Pittsburgh district are urged by the War Board, as a matter of national necessity, to induce all coal operators on their lines having contracts to supply coal to the Northwest via the Lake ports, to load during the remainder of the season at least 50 per cent of their daily supply of cars for such ports there to be transhipped to the Northwest.

Chairman Fairfax Harrison of the Railroads' War Board, in a message addressed to the railroads in the Pittsburgh district, says:

"Although the railroads have in recent months been handling from 23 to 30 per cent more coal than in the corresponding months of last year, a smaller proportion has been shipped to the Lakes than last year, and, in consequence, there is still uncertainty as to whether the Northwest will be supplied with sufficient coal to meet its requirements next winter.

"We deem it now, as we did at the beginning of the Lake season, of the utmost im-

portance that every effort should be made by the railroads involved to satisfy the requirements of the Northwest for water borne coal.

"On the statistics of performance so far this season, it is apparent that unless efforts are renewed and coal is moved at a greater rate for the remainder of the season than in the past months, the requirements will not be satisfied. At the same time the situation of ore accumulated at the furnaces in the Pittsburgh district for National requirements is involved."

#### **COLVER WANTS COAL CARS OVERLOADED 10 PER CENT**

"The first thing is production. Let us have that. Then distribution. Whatever the coal men think of me, I have done my bit to get you cars. I have done that for you, anyhow. (Applause.) So that when you have your coal out and we have the cars, load the cars; load them full. None of this 85 per cent stuff; not even 100 per cent. Make it 110 per cent. Make every car carry what the law allows. Overload it. Don't reassign; don't send your coal farther away than you have to. Send your coal to the nearest customer; get your cars back, and send away some more coal. And practice economy all the time. Are we going to run up prices here and confuse our efforts so that our three billion dollars of Liberty Loan will only have the purchasing power of two billion dollars or of one billion dollars and then have to pay that three billion dollars? Are we going to be satisfied with getting one billion dollars, worth of goods and materials for our three billion dollars and then have to pay the whole three billion dollars back? Is that good business? Is that good sense? The country at large can't run the price up on the Government without running the price up on itself."—Commissioner Colver, in his address to the producers of smokeless coal.

#### **MINING REGARDED MORE AND MORE AS A REAL BUSINESS**

Probably no year in the history of the United States showed greater progress in the mineral industries than 1916. Although this progress was undoubtedly stimulated by the war in Europe, which caused extremely high prices for some of the metals, yet the fact remains that mining is being regarded more as a business and less as a speculation, and the benefits of business methods are becoming evident. Practices that were almost universal a few years ago have been largely abolished, the mining public has been brought to recognize the folly of wasteful and dangerous methods, and there is a gratifying unanimity of opinion in regard to the conservation of life and health, as well as of our mineral resources. The people of the United States



realize more fully than ever before the extent and value of the country's mineral resources and the possibilities that await intelligent and well-directed efforts at utilization.

In the past, economic reasons caused deposits of valuable metals and industrial materials to lie idle; commercial reasons, many of them not truly economic, led to the waste of valuable constituents in many ores; the recovery of minerals from the ground was in many cases incomplete and accompanied by uncalculated loss; and the treatment of ores in mills and smelters saved altogether too low a proportion of the metals sought.—Van H. Manning, in the Bureau of Mines Yearbook.

## HOUSE EXPLOSIVES BILL IS REWRITTEN IN SENATE

### Far-Reaching Powers Are Given to the Bureau of Mines—Licenses To Be Issued

The Explosives bill was rewritten in the Senate. Practically all of the House bill was eliminated and a much more lengthy and comprehensive bill was substituted. Much of the wording of the Senate bill is employed to define terms and to make clear all of the bill's provisions. The more important provisions of the bill are as follows:

That from and after thirty days after the passage and approval of this act no person shall have in his possession or purchase, accept, receive, sell, give, barter or otherwise dispose or procure explosives, or ingredients, except as provided in this act: Provided, That the superintendent, foreman, or other duly authorized employee, at a mine, quarry or other work, may, when licensed so to do, sell or issue, at the beginning of a shift, to any workman under him, such an amount of explosives or ingredients, as may be required by that workman in the performance of his duties for that shift only, and the workman may purchase or accept the explosives, or ingredients, so sold or issued, but the person so selling or issuing same shall see that any unused explosives, or ingredients, are returned at the end of the shift, and that no explosives, or ingredients, are taken by the workman to any point not necessary to the carrying on of his duties for that shift.

That from and after sixty days after the passage and approval of this act every person authorized to sell, issue, or dispose of explosives shall keep a complete itemized and accurate record, showing each person to whom explosives are sold, given, bartered, or to whom or how otherwise disposed of, and the quantity and kind of explosives, and the date of each such sale, gift, barter, or other disposition; and this record shall be sworn to and furnished to the Director of the Bureau of Mines, or his authorized representatives, whenever requested.

SEC. 10. That the Director of the Bureau of

Mines is hereby authorized to issue licenses as follows:

(a) Manufacturer's license, authorizing the manufacture, possession, and sale of explosives and ingredients.

(b) Vendor's license, authorizing the purchase, possession, and sale of explosives of ingredients.

(c) Purchaser's license, authorizing the purchase and possession of explosives and ingredients.

(d) Foreman's license, authorizing the purchase and possession of explosives and ingredients, and sale and issuance of explosives and ingredients to workmen under the proviso to section four above.

(e) Exporter's license, authorizing the licensee to export explosives, but no such license shall authorize exportation in violation of any proclamation of the President issued under any act of Congress.

(f) Importer's license, authorizing the licensee to import explosives.

(g) Analyst's, educator's, inventor's, and investigator's licenses, authorizing the purchase manufacture, possession, testing, and disposal of explosives and ingredients.

That the Director of the Bureau of Mines is hereby authorized to investigate all explosions and fires which may occur or which since the commencement of the present war have occurred in mines, quarries, factories, warehouses, magazines, houses, cars, boats, conveyances, and all places in which explosives or the ingredients thereof are manufactured, transported, stored, or used, and shall, in his discretion, report his findings, in such a manner as he may deem fit, to the proper Federal or State authorities, to the end that if such explosion has been brought about by a wilful act the person or persons causing such act may be proceeded against and brought to justice, or, if said explosion has been brought about by accidental means, that precautions may be taken to prevent similar accidents from occurring. In the prosecution of such investigations the employees of the Bureau of Mines are hereby granted the authority to enter the premises where such explosion or fire has occurred, to examine plans, books, and papers, to administer oaths to, and to examine all witnesses and persons concerned, without let or hindrance on the part of the owner, lessee, operator, or agent thereof.

That the Director of the Bureau of Mines is hereby authorized to utilize such agents, agencies, and all officers of the United States and of the several States, Territories, dependencies, and municipalities thereof, and the District of Columbia, in the execution of this act, and all agents, and all officers of the United States and of the several States and Territories, dependencies, and municipalities thereof, and the District of Columbia, shall hereby have full authority for all acts done by them in the execution of this act when acting by the direction of the Bureau of Mines.



## OPERATORS HELP WORK OUT PLAN TO APPORTION COAL

### Anthracite Men Take Upon Themselves Task of Allotting Government Requirements

Representatives of coal operators of nineteen states, many of whom have not been represented before in the Washington conferences, met in Washington, July 25, in response to telegrams from Chairman Peabody of the Coal Production Committee of the Council of National Defense.

The meeting was called in accordance with resolutions adopted at the conference of operators here on July 17 called to arrange for distribution of coal for Government use. The question of price was not taken up.

Members of the Coal Production Committee pointed out that six of the eight million tons of coal required by the Government are being drawn from Virginia, West Virginia, and Maryland, and said that, in accordance with the resolutions passed at the preceding meeting, some plan must be determined upon to be later passed on by the members of the Cabinet who are on the Council of National Defense, whereby all other coal producing states shall contribute an equitable share to help the operators in these states to supply their regular contracts. A Committee of two from each State's representation of seven was appointed to furnish information to the Coal Production Committee from which some such plan of distribution could be arrived at.

Chairman Peabody said that the anthracite operators, who are to supply the Government with 1,200,000 tons of anthracite coal for delivery at points in nearly all sections of the United States, had held a morning meeting and had agreed to take upon themselves the entire burden of seeing that the Government's requirements are equitably allotted and fully supplied.

## ALUMINUM IN CYANIDE SOLUTION IS BEING STUDIED

The behavior of aluminum in cyanide solutions is being investigated by the Bureau, as metallic aluminum is used as a precipitant, replacing zinc in certain cases, and furthermore, aluminum in a soluble form occurs in certain gold and silver ores. On account of the fact that there was little specific knowledge regarding the behavior of aluminum in cyanide solutions, the reactions occurring between metallic aluminum and the caustic alkalis were investigated, and a particular study was made of the ore and pulp from the Goldfield Consolidated Mine, Goldfield, Nev., as that ore is one of the best examples of the occurrence of soluble aluminum salts in a precious-metal ore. The aluminum occurs as sulphate, and is the result of the decomposition of various minerals containing aluminum.—Van H. Manning, in the Bureau of Mines Yearbook.

## STEEL MEN ORDER MANY COPIES OF POPULAR TECHNICAL PAPERS

Practically every big steel company in the country has sent in long lists of names of their employees to the Bureau of Mines that they may be furnished with copies of technical papers 102 and 136. The latter paper deals with safe practices in the operation of blast furnaces. The former deals with the conservation of health at steel mills.

Many of the leading men in the steel industry have written to the Bureau of Mines commending the publication of such useful reports. Extracts from technical paper 136 follow:

The Bureau of Mines, which has in the past been mainly interested in the reduction of deaths by accidents among men connected with the mining industries, has broadened its scope to include the health of the men and has just issued a report on health conservation at steel mills. This report, while especially prepared for the benefit of the men who toil in the great steel mills, contains advice of direct value to everyone of the 30,000,000 workers in the United States and also to all employers of labor.

The issuance of this report is directly due to a cooperative agreement entered into by Director Van. H. Manning of the Bureau of Mines with the Public Health Service, the latter service assigning Surgeon J. A. Watkins to the task.

"The importance of the prevention of disease among workers can be realized from the fact that the average loss of time due to illness among approximately 30,000,000 workers in the United States is nine days a year," says Surgeon Watkins. "If medical attention be estimated at one dollar a day and earnings at two dollars a day this loss amounts to nearly \$880,000,000 annually.

"The statement that a man whose health is below par has a working efficiency below par should need no explanation. Efficiency of the workman is a subject no operator can afford to ignore, for, after all, industrial efficiency depends on the man behind the machine. Aside then from its humanitarian aspects, the prevention of conditions productive of ill health is a plain business proposition.

"Health is the workingman's capital, his stock in trade. Without health his earning capacity is limited, and those dependent on him suffer as well as he. The workingman has a right to demand that he be not required to work beside men who are diseased or mentally deranged. All candidates for employment and all men already employed should be examined in order that those physically or mentally defective may be detected and given medical attention. Moreover, a system of medical supervision is necessary in order to prevent the introduction and spread of infectious or contagious diseases. Experienced, hard-working, and



valuable employes may not be working at their full capacity because of some defect of which they are unaware. Should such conditions be brought to light and remedied, these men will be restored to full efficiency.

"Again, a progressive disease may be affecting a person, so that his working period is being rapidly shortened. With a system of physical examination his condition is discovered, treatment is instituted at an earlier date, and relief made more certain.

"In the past it has been customary for the attending physician of an industrial plant to confine his activities to the treatment of those injured or taken acutely ill while at work and to give only a part of his time to these duties. The physician should be a whole-time employe and his expert knowledge and training along other lines should be utilized. His duties should include medical examination, and supervision of the health of the working force.

"Another important duty that a company may take up is that of personal hygiene. Employes of experience and skill whose services are of value may be living in such unhygienic surroundings that their period of service is being rapidly cut short. By encouragement and advice the condition can be corrected and sickness in the family prevented.

"Undue fatigue is one of the most common causes of occupational disability; it lowers the vitality of the individual and thereby increases his susceptibility to the hazards of his occupation and to disease in general. Fatigue is also of direct practical importance. It lengthens the time necessary for the worker to perform a given amount of work, thereby decreasing the amount of work performed in a given length of time, as, for instance, a working day. In addition, it increases the liability of error and is an important causative factor of accidents."

### **COAL PRODUCTION SHOWS BIG INCREASE DURING JUNE**

The increase in shipments of bituminous coal in June, 1917, was 1,156 cars, or but 0.15 per cent, compared with May, 1917, but was 155,791 cars, or 26.2 per cent, compared with June, 1916, according to C. E. Leshner, of the U. S. Geological Survey. As the three months compared in this statement have the same number of working days, the totals represent the relative changes in rates of production. There were slight increases in June, compared with May, 1917, in the shipments from the eastern and southern fields and from the Rocky Mountain States and Washington. Illinois, Indiana, western Kentucky, and the Southwestern States recorded decreases. Every district shown had a large

increase in June, 1917, over June, 1916, the most notable increase having been in western Pennsylvania, where in June, 1916, the production was curtailed by labor trouble. In the early part of June production was at the highest rate of which there is record, but a falling off in the third week in several States and in the fourth week in others served to lower the average to about equal that of May.

The shipments of beehive coke in June, 1917, increased 0.23 per cent over May, 1917, and 4.6 per cent over June, 1916.

### **BUREAU OF MINES PUBLICATIONS COVER AN EXTENSIVE FIELD**

The Bureau of Mines publishes three classes of reports—bulletins, technical papers, and miners' circulars. In addition it issues various lists and schedules, a monthly statement of fatalities in coal mines, and the annual report of the director.

Most of the bulletins present in detail the results of technical and scientific investigations, and therefore are of interest chiefly to engineers, chemists, mine officials, and other persons familiar with the subjects discussed. The technical papers are shorter and less formal than the bulletins and contain preliminary statements of the results of the larger investigations or describe the shorter investigations incidental to a larger one. The miners' circulars deal with topics relating to accident prevention and rescue and first-aid methods, the safeguarding of health, and other matters that directly concern the workers in mines, mills, and metallurgical plants. These circulars are written in simple, nontechnical English, and are printed in much larger editions than are the bulletins and technical papers.

The Bureau has already published approximately 100 bulletins, 150 technical papers, and 20 miners' circulars. The following classification gives an idea of the investigations so far represented in the publications of the Bureau:

Publications on the utilization of coal and lignite.

Publications on the composition of coal.

Publications on petroleum technology.

Publications relating to mining laws.

Publications on mineral technology.

Publications on metallurgy.

Publications on coal mining.

Publications on metal mining.

Publications on accident statistics.

Publications on mine gas and natural gas.

Publications on natural gas and industrial gases.

Publications on investigations of mine electrical equipment.

Publications on investigations of explosives.—Van H. Manning, in the Bureau of Mines yearbook.

## GOVERNMENT EXPERTS WELL KNOWN TO MINING MEN



*Photo by Harris & Ewing*

**ALFRED G. WHITE**

Mine economist of the Bureau of Mines, who has been appointed secretary of the Committee on War Minerals.

## PERSONALS

James F. Callbreath, secretary of the American Mining Congress, has returned to the Washington office after an extensive Western trip, where he has been making a visit to the various mining sections and getting under way a membership campaign, which promises great success.

John T. Burns, of Denver, Colo., formerly executive secretary of the International Dry-Farming Congress, has just been appointed assistant secretary of the American Mining Congress, with headquarters at Denver, Colo. An active campaign has been outlined, and it is expected eventually to organize every Western mining state, as Utah and Arizona are now organized.

Dr. Henry Mace Payne, chairman of the 1917 membership committee and a prominent New York consulting engineer, has gone to California in the interest of the proposed affiliation of the oil industry. En route he stopped at Duluth, Minn., where he organized an enthusiastic section of the iron mining men of Minnesota and northern Michigan. Dr. Payne is endeavoring to make 1917 a banner year in the history of the Congress so far as new members are concerned, and is succeeding splendidly.

George H. Crosby, of Duluth, Minn., director of the American Mining Congress, together with Dr. Henry Mace Payne, chairman of the 1917 membership committee, have organized an Iron Mining Section. The work has but begun, and already over fifty of the most influential men in the iron mining industry have pledged their support. The section promises to be one of the most active and enthusiastic of the organization.

## SUBMARINE EXCAVATION TAKES MORE EXPLOSIVE

It has been proven by actual experience and tests by U. S. Bureau of Mines that it requires more and stronger explosives for submarine rock excavation than in open cut work. To a greater extent delays and danger from above causes can be avoided by the proper selection, and care in loading of explosives. Frozen explosives are less sensitive and efficient than when thawed.

Stick to the well-proven standard explosives for best results. Promiscuous trying out of unproven brands may cause a lot of trouble and expense. It is not difficult to reduce the powder cost per ton or yard of material in almost any operation. The charge per hole can be arbitrarily reduced a pound or two with seemingly equal results; but watch out! the shovel cost and secondary drilling cost may jump up, more than wiping out the apparent saving, advises the Bureau.

## Recognize Value of First Aid

The individual miner has recognized the value of the first-aid work not only to his fellow miners but also to himself, for he realizes that a knowledge of first aid may some day enable him to save his own life or the life of some member of his immediate family through the prompt control of arterial bleeding or the protection of wounds to prevent infection. It is perhaps largely because the training offers something he considers of personal benefit that the miner has taken so enthusiastically to the work, and in many fields the instructors have had classes of 50 to 100 men at night. Ordinarily these men take the training at night on their own time and after they have done a hard day's work in the mines. In addition, many walk three or four miles from their homes to the cars. —Van. H. Manning, in the Bureau of Mines Yearbook.



### IDAHO PUSHING EXPERIMENTS WITH PHOSPHATE ROCK

Great persistence is characterizing the experimentation looking to making phosphoric acid available in some better form than the crude rock. Those interested in the Idaho field are especially active in this regard. The phosphate in Idaho is the richest yet found in the Western field, which is one of the largest known. The commercial possibilities of this vast resource are recognized widely and indications are that there will be no lack of research until a means of utilizing this great resource is found. G. R. Mansfield is the Geological Survey specialist who is in charge of this work. With regard to processes for making soluble phosphates he says:

"W. S. Landis has devised a process of rendering soluble the phosphate contained in ordinary phosphate rock, and claims that it is more expeditious and efficient than methods heretofore proposed. The phosphate rock and sodium sulphate or carbonate that are used to bring about the reaction are reduced to a fine powder and treated with water. Finely divided carbon, such as coal or coke, is mixed with the wet mass, or the mixture may be ground wet after the addition of the carbon. The mixture is placed on a suitable perforated grate and ignited, while air is forced through under pressure to make certain that clinkering and burning take place simultaneously with the drying. If the sodium salt separates, the efficiency of the conversion of the insoluble to the soluble phosphate is greatly lessened, but clinkering and burning follow so quickly after drying that there is no time for crystals of sodium salts to form. The mass dries very quickly, puffs up, and sinters in a very satisfactory manner and the analyses show a high yield of soluble phosphate. After the reaction takes place the material is finely ground to make it of the highest availability.

"J. W. Beckman has invented a process that provides a simple and comparatively inexpensive method of producing fertilizer containing potash and phosphoric acid in readily available concentrated form and in chemical combination. One specific method of carrying out the process is as follows: Alunite and rock phosphate are mixed in suitable proportions, which need not be limited to the chemical equivalents. The mixture is then heated in a furnace to or above a red heat, and in the reaction which ensues potassium phosphate is produced. This may be dissolved in water and purified. The reaction is said to be assisted by the presence of seemingly inert substances, the exact function of which is not thoroughly understood. Silica is taken as an example of these substances.

"A. H. Cowles has devised a process for rendering available the phosphoric acid in phosphate rock, in which potash-aluminum silicate is used as the opening reagent at high temperature. Cowles has found that by taking bone ash, apatite, or phosphate rock and adding sufficient feldspar to furnish one molecular weight of silica to each two molecular weights of lime, or its equivalent, a mixture is obtained which after being heated to or above the sintering point yields on treatment with acid all the phosphoric acid contained in the original phosphate rock and also the potassium and aluminum in feldspar. Due allowance must be made for chemical equivalents of other compounds containing the same bases, or other bases replacing those in the theoretical formula of the feldspar, for example. If the product is treated with sulphuric acid in just sufficient quantity to dissolve the alumina and potash in it, these bases will form soluble sulphates or the double sulphate potash alum and the phosphoric acid will be set free. Hydrochloric acid may be employed instead of sulphuric. The process may be carried out in furnaces of different forms, but preferably in a rotary furnace similar to that used in cement burning. The temperature required ranges from 1,000° to 1,700° C. After sintering or fusion, followed by disintegration, the product as it comes from the furnace is ground and may be used directly as a fertilizer. By treatment with acid or solutions of salts that will not cause insoluble phosphates or aluminates to form, it may be leached and the phosphoric acid and other valuable salts then separated by any well-known chemical method.

"S. Peacock has devised a process of separating phosphorus from its combinations in phosphates and producing at the same time carbides and nitrates of phosphorus which may be used in the production of phosphorous oxides or nitrogen salts.

"Robert Stewart also has devised a process of producing acid monocalcium phosphate.

"F. S. Washburn has devised a process for making ammonium phosphate. He starts with phosphate rock and adds sufficient sulphuric acid to convert it to calcium sulphate, to free the phosphoric acid, and to dissolve the impurities in the rock. The solution of phosphoric acid is next separated from the calcium sulphate by filtration and washing, whereby crude phosphoric acid is formed, which contains only a few tenths of 1 per cent of such impurities as iron, alumina, and soluble lime, with a small quantity of free sulphuric acid. This solution is then ammoniated either by adding aqua ammonia or passing through it the ammonia vapor produced from calcium cyanamid or lime nitrogen. The product formed on evaporation is tapped off into a rather high vacuum chamber. The mass then puffs up, becomes very porous, and is easily granulated or crushed for admixture with fertilizers.



## CRITICISM OF COAL OPERATORS RESENTED

### J. G. Puterbaugh Replies to Editorial Which Declares Coal is Being "Held Back" at Mines

To voice the exceptions he takes to a recent editorial in the *Christian Science Monitor*, J. G. Puterbaugh, the president of the McAlester Fuel Company, and one of the most active mining men in the Southwest, has written the editor of the publication mentioned in part as follows:

"No more authentic document could be quoted at this time than the report of the Federal Trade Commission to the President of the Senate and the Speaker of the House of Representatives under so recent a date as June 20, 1917.

"The report of the Federal Trade Commission is clear enough to convince any fair-minded citizen that the existing shortage of coal is not due to a lack of patriotism or a lack of effort on the part of the coal producers of this country.

"The railroad companies contend that for a number of years they have been subjected to excessive regulation by both the states and the nation; that the taking away from the carriers of the prospect of profit has discouraged the expansion of our transportation systems, the purchase of new equipment, the building of extensions and the double-tracking of existing single track lines which are proving inadequate and that, because of their inability to obtain capital to develop increased facilities, the transportation lines of this country had become unable to properly take care of more business and, therefore, they have of course proven unequal to the colossal task of taking care of the unprecedented increase in business now being offered and there is no question that the shortage of coal existing throughout the country today is primarily attributable to the inability of the producers to obtain cars in which to load the coal as it is hoisted from the mines.

"Next to the shortage of cars production is being restricted by the shortage of labor. At the instance of the labor organizations immigration laws have been passed which are restricting the flow into this country of foreign labor which to a very large extent forms the mining population. Further, since the beginning of the war in Europe, aside from the existing legislation, immigration has been stopped. Steel plants and munitions factories, who have been making unheard of profits from the war, have been offering the miners premium wages and regular employment and this situation has depleted the working forces at the mines as a miner would rather work for a steel plant six days in the week than to work for a coal mine and be laid off three days because of the failure of the transportation company to furnish cars.

"While I am not technically informed on conditions in the East, I am told that New England uses annually under normal conditions

about 30 million tons of coal; that under normal conditions 22 million tons of this coal is transported from West Virginia fields by water, and that only eight million tons are normally transported by rail. The ships that ordinarily transport this enormous quantity of coal by water are now being offered such extremely high rewards for ocean trips, including the transportation of coal and other commodities to France and Italy, that they have abandoned their New England business and gone into the ocean-going service at a time when New England's requirements are far above normal. The result is that the burden of transporting 22 million tons of absolutely new business is thrown upon the railroads of the East at a time when every other line of business is taxing them to their utmost capacity.

"Under such conditions is it strange that the carriers of the East are not equipped to give 100 per cent service or to meet these tremendous demands, and is it fair or right for the editor of a Christian journal with a nation-wide circulation to indict honor and patriotism and the good faith of the owners and managers of the railroads and coal mines who are doing their utmost in a great national emergency?

"Is it not obvious that even if the managements of the railroads and coal mines are not as patriotic as our editors, that they would still have abundant selfish reasons for transporting the maximum possible tonnage of coal in order to make the largest possible profits, and what possible motive could a coal operator have for hoarding coal at the mines when the prices are already abundantly high and demand far beyond production? Are you aware of the fact that owing to its bulk and the cost of rehandling, bituminous coal must be dumped directly into the railroad cars as it is hoisted from the mine and that this is also the practice and truth of nine-tenths of the anthracite coal?

"There is no such thing as the 'holding back' of coal at the mines for a higher price. If cars are not available at the beginning of a given day when the miners go to work, that mine cannot operate that day. Coal cars that are loaded today must be billed out tonight or that coal mine cannot operate tomorrow.

"In the Southwest, large number of coal cars are being diverted for the transportation of lumber. Coal operators whose mines are lying idle because of this diversion of their proper equipment, are protesting to the carriers and to the Government, but the carriers meet our protest with the statement that they are being ordered by the Government to give absolute preference in the furnishing of equipment to lumber mills for the purpose of furnishing lumber for Government needs.

"Thus it develops that the War Department itself is interfering with the normal production of coal, a commodity which is more acutely needed throughout the country at this time than any other one article of commerce. The situation is no more satisfactory to the coal operators or to the railroad managers than to the public, but because of my interest in and intimate association with the coal business I have made



it my business to become informed as to the transportation situation and I know that both the coal people and the railroad people are doing their utmost to meet and handle the situation to the best interests of the public and the Nation.

"This being true it occurs to me that the press of the country, if it desires to be equally patriotic and useful, should give those in other lines of industry credit for being patriotic American citizens and to refrain from unthinking and unjust criticism, or until a definite knowledge of the facts has been developed.

"There is nothing that so discourages patriotism and demoralizes the usefulness of those who are trying to serve and who are taxing every faculty and resource to its utmost than unjust public criticism. The newspapers of this country enjoy unusual freedom in the expression of opinion and we desire to preserve this 'freedom of the press' but this freedom also carries with it an obligation on the part of our unbridled press, especially in the time of a national emergency such as now exists, to be fair and careful to the end that harmonious cooperation and not friction and controversy may be developed, and this obligation is augmented because of the fact that the common, every-day citizen is to too great an extent disposed to trust and believe as absolutely correct what he reads in the newspapers.

"Allow me to commend to your editor for careful perusal the Federal Trade Commission's report to the Senate and House of Representatives under date of June 20, which will give you very clear, correct and reliable information, and which will enable you to write more fairly and intelligently on the coal and coal transportation situation."

#### **Cooperates with California**

Mine inspection in the State of California is carried out under a cooperative agreement between the Bureau of Mines and the Industrial Accident Commission of the State, whereby a mining engineer of the Bureau of Mines occupies the position of chief mine inspector of the State. He is assisted by an able corps of deputies appointed by the State, following an examination to establish their qualifications. California is the only State in which mine inspection is carried out under such an arrangement. The work of the mine inspector essentially concerns metal mining, as coal mining in California is in its infancy. There is a total of approximately 14,000 men employed in mines, quarries, and treatment plants in the State.—Van H. Manning, in the Bureau of Mines Yearbook.

#### **Rescue Car at Michigan Mines**

The Bureau of Mines rescue car, which has its headquarters at Ironwood, will be at the Empire Mining Company's property at Palmer, Mich., August 6 to August 11. From August 13 to 18, the car will be at Gwinn, Mich.

### **RELATIONS WITH LABOR MORE DELICATE THAN EVER BEFORE**

The Employers' Association of Montana has written its members as follows:

"Never in the history of the country have labor conditions faced employers which required more careful consideration and cool-headed counsel than the situation at hand today.

"Never has there been a time when employers had greater need for organization. Now is the time for the employer to speak and act—not as individuals—but as members of the employers' association. Just as being too arbitrary in meeting labor demands might lead to difficulties, so will an attitude of 'yielding all' establish conditions that may be impossible to meet when times are back to normal.

"Be fair, but firm. In adjusting labor problems bear in mind:

"1. That living wages are necessary for all who toil.

"2. That we cannot be just to our employes unless we are also just to ourselves; that not only does our own business and happiness depend in large part on an equitable arrangement between employer and employe, but the future growth and prosperity of the entire community rests on a stable—not a mushroom—industrial condition.

"Sit tight. To lose one's head now is to rock the boat. Don't lose perspective. The best guide through troubles, such as those which now beset a number of Montana communities, is good judgment and old-fashioned common sense."

#### **Lode Gold Output Increases**

The production of placer gold in Alaska fell off slightly during 1916 owing to the exhaustion of some of the richer placers, but the lode gold output was considerably increased by the opening of large low-grade properties at Juneau. The production of copper more than doubled in tonnage and trebled in value. Antimony, which is found associated with the lode gold of the Fairbanks district and previously shipped only intermittently, was eagerly sought by ore buyers, and tin, marble, and gypsum ran about the same as the year previous. A small amount of oil was produced at Katalla, but lack of transportation facilities and financial difficulties prevented the company operating there from producing on a scale of any magnitude.—Van H. Manning, in the Bureau of Mines Yearbook.

#### **Well Equipped**

The Bureau of Mines at its Pittsburgh experiment station has equipment for laboratory testing of explosives. These tests involve chemical and physical examination and the detonation of charges under carefully controlled conditions.—Van H. Manning in the Bureau of Mines Yearbook.



## UTAH HAS PLAN TO PROTECT INVESTORS

**Information Will Be Furnished Gratis as to  
Mining Stocks Offered for Sale**

By A. G. MACKENZIE

Salt Lake City, July 12.—It is proposed to obtain and make available without charge to prospective investors in Utah mining stocks and to the public generally, all possible information regarding the physical and promotion conditions of mines and mine prospects the stocks or bonds of which are offered for sale to the public in Utah.

The purpose of the plan is to afford protection directly to investors and indirectly to the promoters of legitimate mines or prospects, thereby benefitting the mining industry as a whole.

It is believed that in the greater majority of instances mining promotions in Utah are honestly and properly presented for the consideration of the investing public; and that occasionally they are otherwise presented.

It is not proposed to discredit all promotion issues or any proper promotion issue or to discourage in any degree the energy and enterprise which are so vital to the development of the industry, as it is recognized that investment in new properties or prospects is essential and desirable. Nor is it proposed to impose conditions that do not take into consideration the element of chance or uncertainty which of necessity exists in many, if not all, mining development propositions; to express approval or disapproval of any promotion; or to undertake to advise investors whether or not to invest in any stock issue.

Instead, the plan contemplates obtaining and making available actual facts regarding the physical property back of each issue offered, the method of promotion, amount and disposition of promotion or bonus stocks and bonds, and other information to which the investor is properly entitled, and which will assist him to decide whether he desires to participate in the stock or bond issue offered.

The investigation is not to be vexatiously inquisitorial and shall not seek to inquire into matters which are of right the concern only of the owners or promoters of the issue. As far as possible, the information will be obtained from public records, and from the owners or promoters themselves. Should the information thus obtained be incomplete, subject to question or otherwise unsatisfactory, it will be supplemented by information obtained from other and trustworthy sources.

All information will be filed and offered without charge or conditions to any inquirer.

It is proposed that this plan be made operative under the direction and control of a special bureau of the Utah Chapter of the American Mining Congress or an independent bureau, initiated and endorsed by the chapter. This

bureau should be composed of men so sincerely interested in the mining industry and so jealous of the reputation of mining that they will have the courage and determination to stand firmly against fraudulent promotions and promoters as well as to support those whose promotions and methods are honest.

The suggested procedure is as follows, subject to amplification and change:

1. Obtain from the public records all information therein contained regarding every promotion issue offered to the public in Utah.

2. Present to the promoters of the issue a request for additional information, stating with the request the precise purpose for which the information is desired.

3. Verify and supplement the information previously obtained, using for this purpose the knowledge, skill and experience of men in whose integrity the bureau has complete confidence.

4. Keep all information regarding promotions investigated on file at a central place and furnish it on request to any inquirer.

5. Advise the public by suitable means of the existence and purpose of the bureau and invite inquirers.

The request to promoters should include the following inquiries:

1. Name of company?
2. Names, addresses and business of the officers and directors?
3. Name of mine manager, superintendent or foreman, and engineer?
4. Total amount of capital stock, total amount issued to date, price received for same and total amount of shares and cash now in treasury?
5. Par value of stock?
6. Is the stock assessable?
7. Is the stock listed on any stock exchange?
8. Name of promoter or selling agent of stock, with names of issues previously promoted by him, in Utah or elsewhere?
9. Names of holders of bonus or promotion stock and amount held by each?
10. Consideration for which bonus or promotion stock was issued?
11. Purpose of stock issued?
12. What debts or obligations other than outstanding capital stock exist against the company or property?
13. Explain in detail nature of title under which company holds the physical property?
14. What is the value of the physical property?
15. Description of physical property:
  - (a) In what district?
  - (b) Names and areas of claims or groups?
  - (c) What ones are patented or surveyed for patent?
  - (d) Is there a bond on any of the claims? If so, for what amount and when due?
  - (e) Are there any conflicts? If so, give details. Is any litigation pending? If so, give details.
  - (f) Names of adjoining properties?
  - (g) Amount of development work? in detail?
  - (h) Mechanical equipment?
  - (i) Geological and mineral conditions, giving mineral values and size of ore bodies in detail



as shown by assays production or development?

- (j) Mineral output to date?
- (k) Dividends paid to date?
- (l) Number of miners now employed?
- (m) Transportation facilities?
- (n) Is water supply sufficient for thorough development?

The form containing these inquiries is to be returned signed by the promoter or by a proper officer of the company, the statements made to be attested before a notary public at the expense of the bureau if desired.

One of these forms will be sent by mail to the promoter of each new mining stock issue with stamped returned envelope inclosed. If the form is not returned or its receipt acknowledged within a reasonable time, personal inquiry in connection with it will be made by the office of the bureau. If answers to the questions be refused, persons inquiring at the bureau regarding the matter will be advised of the refusal and will receive such information regarding the issue as may have been obtained by the bureau from the other sources above mentioned.

It is submitted that the questions proposed for submission to promoters call for information to which a prospective investor is entitled and which will readily be answered by the promoter of a meritorious proposition.

### USE OF MOLYBDENUM GROWS ABROAD; DECLINES HERE

The present uses of molybdenum in this country are comparatively few and do not require large quantities of the metal. Molybdenum ore was used in tool steels by a number of companies for a few years, but the United States Geological Survey has been informed that this use practically has been discontinued by most steel makers. So far as can be learned, only one or two are now using it and they are using only small quantities. The principal use in this country seems to be for the making of ammonium molybdate, a reagent for the determination of phosphorus. For this purpose steel works use quantities, which, considered as an expensive chemical, are large, but when considered as a basis for mining, are very small. Other quantities are used as metal in electrical work, and as a part of Haynes' stellite.

Abroad, the use of molybdenum in steel seems to have grown rather than to have diminished, and it is believed that the rise in price a year or so before the beginning of the European war was due to the demand from Germany. Comparatively large quantities are used in France and England, also.

Concerning the probable future market, the United States Geological Survey can give little information. If American steel makers find that molybdenum can be used to advantage in tool steels, with or in place of tungsten, or independently, doubtless the demand will increase; but the entire foreign

market, combined with what little is used in America, is satisfied each year with a quantity of molybdenum which weighs much less than the gold annually produced in the world.

The price of molybdenum ores is largely a matter of bargaining. For rich molybdenite ores carrying 90 per cent or more  $\text{MoS}_2$ , probably the standard price of 105 shillings per long ton unit (22.4 pounds) delivered on the dock in Great Britain may be taken as a basis, for American prices must compete with it; but for leaner ores and concentrates, which are almost universal in this country, the price is probably lower. The buyers in this country that are known to the Geological Survey are:

J. T. Baker Chemical Company, Phillipsburg, N. J.; Baker & Adamson Chemical Company, Easton, Pa.; Foote Mineral Company, 107 North Nineteenth Street, Philadelphia, Pa.; Goldschmidt Thermit Company, 120 Broadway, New York City, N. Y.; Charles Hardy, 50 Church Street, New York City, N. Y.; Primos Chemical Company, Primos, Pa.; Henry E. Wood & Company, 1734 Arapahoe Street, Denver, Colo.; York Metal and Alloys Company, York, Pa.

In 1916 the Bureau of Mines published Bulletin 111, "Molybdenum: Its Ores and Their Concentration," with a discussion of market, prices, and uses, by F. W. Horton. This describes the molybdenum deposits and industry in the United States. No free edition of this bulletin was issued by the Bureau of Mines, but it may be purchased from the Superintendent of Documents, Washington, D. C., for 30 cents, or it may be consulted at the large public and university libraries of the country.

### Begin "Clean Up" at Radium Plant

A "clean-up" of the radium at the plant of the National Radium Institute at Denver, Colo., has been started, and work is now being done along the line of finding the best method for final fractionation and "clean-up" of all material of varied character which has accumulated during the running of the plant. Some of this material is very different from the ordinary sulphates, which are obtained as a radium concentrate. Some material which is now being treated contains carbon, lead chloride, silica, and barium sulphate, the latter being only about 20 per cent of the total. Such material needs special treatment. Nearly 500 mgs. of radium element has been delivered during the month to the Golden office for final fractionation.

Some further work has been done on the solubility of radium sulphate in different concentrations of sulphuric acid. This is a continuation of the same work which was reported on by Dr. Lind at the meeting of the American Chemical Society at Kansas City, and has a direct bearing on the precipitation of radium from solutions carrying radium.

## EXPRESS MEN LACKED VISION, SAYS LANE

**Secretary of Interior Tells Coal Operators  
How Officials Helped Bring Parcels Post**

Secretary Lane told of this incident in his address at the coal price fixing conference:

"I want to tell you of a little thing that happened in this city six or seven years ago when I was a member of the Interstate Commerce Commission. At that time there were complaints before the Interstate Commerce Commission against the express rates of all the express carriers in the country. It had several times been suggested to me that before we dealt with a large and intricate problem we should call in the men who had the primary responsibility for solving that problem, the presidents and the managers of these companies; and, inasmuch as I saw that it was necessary to reform the whole express-rate system and that this thing was not a local question but was a question that extended throughout the breadth of the land, I did what was suggested, and for two weeks I sat in my office with these gentlemen, saying to them, 'It is necessary, gentlemen, that the rates upon small packages should be reduced; it is necessary that we should have a basis of rates that will be intelligible to your own people, some of whom are under indictment for violating their tariffs; it is necessary that the rates that are made should be uniform throughout the great extent of our territory. I put it up to you to institute that system of rates; tell me the basis upon which the rates shall be made, tell me how they can be constructed, and how they can be presented.' What was the answer I got? With the exception of one, they replied, 'As long as you leave us the amount of money we are making now we do not care what kind of a system you put into effect.' (I see a man here who knows that what I am telling you is true.) I replied to them, 'You will never have that opportunity unless you do it now; you will have a parcels post.' They came back saying, 'We understand from the hill that the parcel-post bill cannot carry.'

"At the end of the two weeks' conference I said, 'Gentlemen, this thing will have to rest with the commission. You have not taken up the challenge that I have given to you. It is a challenge that rests upon you not by virtue of anything I have said but by virtue of a condition that exists throughout the United States. We will proceed and make the rates and make new systems of stating rates and make new classifications and so reform the entire express rates for all the express carriers of the United States.'

"That was a challenge to their vision, and they did not have the vision."

## DRILLERS SAVING MORE WELL RECORDS THAN FORMERLY

Troubles of oil operators in trying to get drillers to save well records are quite in accord with the experience of the Geological Survey. However, drillers are doing infinitely better now than they were a few years ago, reports show. With perseverance ultimately they will be taught that they can not afford to disregard the chance to obtain information which may mean thousands of dollars, it is believed here.

The United States Geological Survey has been conducting a campaign with this end in view for some time. A further step, taken after the value of the record has become evident to the driller, is to teach him the possibilities of the examination of samples. The need for this is shown by an instance of a well drilled in Oklahoma on most promising structure. This well was dry, not only failing to find oil or gas, but also having no water in the lower sands. An examination of the sands would appear to a thinking man to be a necessity, as it might indicate the reason why the well was dry. If they were cemented, or of such texture that oil or water could not pass through them, the structure as a whole would not be condemned on the evidence offered by the single well. On the other hand if they were open and offered conditions favorable for oil accumulation there would be no doubt that the structure is truly barren. Such examination was neglected in this case and as the matter now stands it is not possible to decide the question without drilling another hole. This is one case in many.

## Lignites Important

The limited preliminary work thus far done on lignites and lignite products indicates that the possibilities in connection with the utilization of lignite and the development of its by-products and of associated industries are very encouraging and are worthy of thorough investigation and research, in view of the great extent of the lignite fields and the great importance of the lignite products, not only in the western lignite areas but also to the whole country.—Van. H. Manning, in the Bureau of Mines Yearbook.

## Strontium's Future is Bright

Strontium will take on a new importance if the strontium process of refining sugar should be adopted in this country. Reports that it is being considered are in circulation. This prospect, as well as the cutting off of its importation, has stimulated the mining of strontium in this country. Adolf Knopf, of the Geological Survey, reports a great deal of activity in the mining of this product in Arizona and California. Prospecting for strontium also is extensive.



## HIGHER TUNGSTEN DUTY IS DECLARED NECESSARY

### Colorado Miners Say That Bolivian Ore Should Be Assessed \$10 a Unit at United States Custom Houses

Reasons why a tariff tax should be levied against tungsten has been presented to the Finance Committee of the Senate as follows, by Colorado miners:

The average cost of production in Colorado is \$16.50 per unit. A unit is 20 pounds of tungstic acid.

Reasons for this high cost: (1) The large amount of development work necessary to keep up production. (2) Because the ore comes in lenses and not in ore shoots.

The cost of the ore laid down in New York from Bolivia is \$8 per unit. The reason for this low cost is that the tungsten veins in Bolivia occur in continuous ore shoots, and the large amount of development work is not necessary to keep up production. There should be a tariff of \$10 per unit placed on the ore coming from Bolivia, which ships about 600,000 pounds per month of 60 per cent product, making 18,000 units of tungstic acid per month. At \$10 per unit, this would produce \$180,000 per month or \$2,160,000 per year revenue.

Other reasons why a tariff should be levied: (1) Our mines should be developed, because this Government should know that we have sufficient tungsten to make the necessary high-grade steel to turn out our munitions of war, and it is impossible to do that without tungsten tool steel. There will be very little development done because our miners know of the cheap product coming in from Bolivia. He never knows when the price may drop to \$10 per unit. (2) This cheap product comes direct to the large manufacturing establishments, which are reaping enormous profits from this war.

The price received for tungsten tool steel is \$2.50 per pound, while the tungsten it contains is but 18 per cent. Eighty per cent of the tungsten ore produced in Colorado is produced by small leasers, and they are entitled to protection. Most of the mines, it is true, are owned by these same steel concerns which buy the cheap product from Bolivia, and thus bring pressure to bear upon our miners, constantly reminding him of the fact that the companies can get all the tungsten ore they need from Bolivia at a much lower price than they are now paying here. And it is a fact that they are paying the miners of Colorado on an average of \$17 per unit for 60 per cent product, which proves conclusively that a tariff of \$10 per unit will not work a hardship on anyone.

The output in the United States averages about 19,000 units per month. This could be easily doubled if the miner could feel assured of a price near \$20 per unit.

Of course, it is well known that this high-grade tool steel is not used by the common people of the country, but is consumed by the large establishments.

## EXPLOSIVES INDUSTRY EXPANDING AT A REMARKABLE RATE

The wonderful development of the explosives manufacturing industry in the United States during the last four years is shown in a report just issued by the Bureau of Mines, Department of the Interior.

In the year 1913, which was a normal year, the exports reached \$5,521,077. The following year, in which the European war started, the exports reached \$10,037,587; in 1915, \$188,969,893, and in 1916, when the entire industry had been thoroughly organized, the total was \$717,144,649.

The total production of explosives in the United States during 1916, exclusive of exports, was 252,708 tons, an increase of 22,000 tons over the previous year.

The amount of so-called permissible explosives, those that have passed severe tests of the Bureau of Mines and which are used in dangerous mines because of their degree of safety, was 26,566,521 pounds, an increase of 5,000,000 pounds as compared with 1915.

The production for 1916 is segregated as follows: Black powder, 215,575,025 pounds; "high" explosives other than permissible explosives, 255,154,787 pounds, and permissible explosives, 34,685,240 pounds. These figures represent an increase of 17,852,725 pounds of black powder, 19,326,200 pounds of high explosives, and 7,335,331 pounds of permissible explosives as compared with figures for 1915.

### Alaska Prospers

The report for the fiscal year 1916 shows that the year was particularly prosperous for the Alaskan Territory, owing to the war demand for its metals and fish, the construction of the Government railroad, the opening of the coal lands to lease, the taking up of considerable areas by homesteaders, and a particularly long and dry summer which favored the agriculturists during 1915.

The war demand which raised the price of metals forced the production of the operating mines far beyond their ordinary output, caused the reopening of others that had been idle since the fall of the price of copper in 1907, and stimulated both capitalists and prospectors to discover promising prospects.—Van. H. Manning, in the Bureau of Mines Yearbook.

### Appreciative, Anyway

A Japanese correspondent writes the Bureau of Mines as follows:

"I must thank you for the splendid bulletin that I have the honour to beg you. The book you sent to offer me seems a very instructive and useful one for my investigation; I have read with great eagerness and already felt the pleasure.

"Believe me, I am truly grateful for your Bureau of Mines.

"I should greatly appreciate the favor."



## TIDEWATER COAL EXCHANGE OPERATING

### Cars to the Number of 150,000 to be Released for Other Service by Operation of Pooling Plan

An official statement reviewing the organization of the Tidewater Coal Exchange reads as follows:

To prevent detention of cars at tidewater ports, bituminous coal, amounting to about thirty-six million tons a year, will be pooled pending boat shipment at four Atlantic Coast ports—New York, Philadelphia, Hampton Roads and Baltimore.

Recognizing that detention at tidewater of coal that is held pending shipment now averages about five and one-half days, and pointing out that if this detention could be reduced to three days about seven million more tons of coal could be moved with the same car equipment, or the equivalent of about 150,000 cars be released for other service, the Railroad War Board and the Committee on Coal Production of the Council of National Defense cooperating with the railroads and the three hundred shippers who route coal via the Atlantic ports, to establish the Tidewater Coal Exchange, which is to be maintained at the expense of the railroads.

The first meeting of shippers was called on May 31, by Chairman Peabody of the Committee on Coal Production, who explained that the purpose of the meeting was to formulate a definite plan similar to one already in vogue at Lake Erie ports, for pooling all tidewater coal shipments. Three of the five railroad executives who form the Railroad War Board—Rea, Elliott, Kruttschnitt and President Holdon, told the shippers of the necessity of some plan for pooling coal at Atlantic ports just as it is being pooled on Lake Erie. A committee of twenty-five—five from New England receivers, five from the producers of bituminous coal, five producers of anthracite and five representing vessel ownership—was appointed. This committee, with Mr. Elliott acting as chairman, met in Washington on June 7 and again on June 11. It accepted the report of committee urging that a tidewater pool be established and suggested that a Commissioner be selected with central offices in Washington and that four Deputy Commissioners be selected for the ports of New York, Philadelphia, Baltimore and Hampton Roads. On June 20 the election of Rembrandt Peale as Commissioner was announced, and the selection of the Deputy Commissioners followed.

The plan for pooling coal, it is explained, entails sacrifice by many operators. "Coal shipments," it is explained, "will be standardized, so that instead of there being 1,166 different classifications each of which requires

considerable switching when a boat for any particular kind arrives coal will now be classified into only 45 kinds. Coal of like kinds, after careful inspection, will be pooled; that is, run on one track so that, when a boat arrives, to take a cargo of 100 cars, for instance, of a particular classification, from Baltimore to Boston, the first 100 cars of that classification will be run on board and dumped. Both cars and ships will thus be more quickly utilized. The cars will be emptied and turned to other uses and the vessels will not have to wait while cars of a certain consignment are extricated from a crowded switchyard."

The Tidewater Coal Exchange, it is explained, as indicated in the rules for shippers, will be like a bank or clearing house. All tidewater coal will be consigned to it and each shipper will report shipments to it daily so that whenever his vessel or barge arrives at Baltimore, or any of the three other ports, he can authorize the Deputy Commissioner in charge to load coal from any track to the extent of his credit, and the Commissioner, if he desires to expedite the movement of the vessel, can authorize the movement of an equivalent of the shipper's coal that is in transit. It is possible for one shipper to transfer credit in coal to another, in writing. The rules also provide for careful inspection, daily reports, the adjustment of differences, embargoes on the shipments of any member not providing vessel and for pro-rate demurrage.

The Deputy Commissioners chosen are: for Baltimore, G. F. Malone, formerly superintendent of car service, Baltimore & Ohio Railroad; for New York, J. W. Searles, formerly general sales manager of the Pennsylvania Coal & Coke Corporation; for Hampton Roads, J. W. Howe, formerly coal freight agent, Chesapeake & Ohio Railroad; and for Philadelphia, Harry Boulton, vice president of the Association of Bituminous Coal Operators of Central Pennsylvania.

The initial tidewater pooling will be put into effect on the Baltimore & Ohio and Western Maryland railway piers at Baltimore.

### Barytes Break Production Record

One of the remarkable developments of the present expansion of the mining industry is the fact that the production of barytes has increased over 800 per cent as compared with the production in 1880. Despite the heavy output in 1915, the 1916 production has increased 113 per cent over that of 1915. All importation of barytes has ceased and, as a result, the country is entirely dependent on its domestic supply. The needs of the country are being met satisfactorily. The domestic manufacture of barium chemicals shows an increase of 100 per cent in 1916 over that of 1915.



## CANNEL COAL IS SOURCE OF LIGHT HYDROCARBONS

**Kerosene Oil First Was Obtained from  
This Kind of Coal—Used as Early as  
1846**

The use of cannel coal of most interest, both in the past and in the future, is in the production of oil and other chemical by-products, according to Geo. H. Ashley, of the U. S. Geological Survey. It was this use that led to its widespread mining from 1855 to 1859, when the discovery of petroleum opened the way to its displacement, and it is this use that is apparently again calling attention to it, the oil now being demanded for conversion into the lighter hydrocarbons (especially gasoline) for use in portable motors and the by-product chemicals for the enlarging chemical industry of the country.

The use of coal for the production of oil is not recent, it having been employed for the purpose as early as 1760. In Lewis's *Materia Medica*, published in that year, mention is made of oils distilled from black bituminous shales for medical purposes. Even earlier than that, in 1694, patents were issued, according to Gesner, to Eele, Hancock, and Portlock for making "pitch, tar, and oyle out of a kind of stone." In 1781 the Earl of Dundonald distilled oil from coal, and others distilled oils and tars from bituminous schists, so that at an early date these oils, somewhat purified, were used for burning in lamps and for lubricating machinery.

Abraham Gesner claims to have been the first to manufacture oil from coal in the United States, and in 1846 exhibited the use of his oil in lamps. His patents, known as the "kerosene patents," granted nine years later, were sold to the North American Kerosene Gaslight Company, which proceeded to make and sell "kerosene oil," as it was called. This early oil was not as highly refined as is kerosene today, and a disagreeable odor in burning kept down its sale. It came into common use about 1854.

## COOPERATION WITH EDUCATIONAL INSTITUTIONS PROVES SUCCESSFUL

An important feature of the bureau's work has been the close association in which it has worked with the universities and mining schools of the country. Nowhere is this better illustrated than in the activities of its Salt Lake City station. This city has of late years become an extremely important mining and metallurgical center. Some four years ago the Legislature of Utah granted an appropriation to the State university of \$7,500 a year for metallurgical research especially looking to the improvement of methods for treating the low-grade and complex ores of the State, great deposits of which were then either lying idle and unworkable or were actually going to waste in the mining and

treatment of the higher grade ore associated with them.

The university authorities sought the cooperation of the Bureau of Mines in the carrying out of this work, and it was finally decided to put one of the bureau's metallurgists in direct charge of this research work. A considerable part of the legislative appropriation above mentioned is each year expended on a number of fellowships, the recipients of which work on individual problems under the direction of the bureau's metallurgist. The remainder of the special fund is used for equipment, supplies, traveling expenses, etc. The station has its quarters in the university buildings and has the use of the university's general equipment, such as its library and laboratories. The present is the third year of the cooperation, and in that time the work has developed so favorably that the bureau has increased its own staff at the station from the one representative originally agreed upon until it now has seven. Van. H. Manning, in the Bureau of Mines Yearbook.

## Oxygen in a Barricade

In connection with mine explosions, the question has been raised as to the length of time men can live inside of a barricade with the air originally inclosed therein, assuming it to be normally pure air. The following figures are submitted by the Bureau of Mines:

In 3,000 cubic feet of space there would be 600 cubic feet of oxygen. As the oxygen is consumed an almost equal amount of CO<sub>2</sub> is produced. A person could live in air containing 13 per cent oxygen; this would allow 210 cubic feet of oxygen to be consumed before serious trouble would be experienced. In a state of rest, if he kept cool and unexcited, a man would not consume more than 0.4 or 0.5 liter of oxygen in a minute. As there are 28,316 liters in a cubic foot there would be 5946 liters in 210 cubic feet of oxygen, or sufficient to last one man 200 to 250 hours. At the end of this period the resultant air would contain about 6 per cent CO<sub>2</sub> and breathing would be deep and laborious.

## ILLUMINATING GAS TO BE STRIPPED OF ITS TOLUOL

Need for toluol has increased to the point that it is believed necessary to strip all illuminating gas of this product. To remove the toluol from illuminating gas will make necessary some changes in the regulations prescribed by most public utilities commissions. It is anticipated, however, that whatever amendment will be made necessary will be made promptly. The question now is being considered by New Jersey. C. E. Leshner, of the United States Geological Survey, was called to Trenton recently to testify in this connection.



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AUGUST, 1917

## SECRETARY LANE ENCOURAGED BY HOME MANGANESE OUTPUT

Secretary Lane in a recent interview called attention to the response of the miners of manganese to the country's needs. "Modern steel-making demands manganese," said Secretary Lane, "and the shortage of a domestic supply of this ore has been a matter of concern to those of us who wish America to be industrially independent. But now the war requirements for steel have been realized by the manganese operators, for reports already received in the Department of the Interior show that shipments of high grade manganese during the past 6 months aggregate 28,345 tons or nearly 10 per cent more than the tonnage for the whole 12 months of 1916, which amounts in turn were 3 times the 1915 shipments. Shipments are reported from 10 States, but in Montana alone the shipments since last January largely exceed the shipments for the whole United States in 1915.

"The manganese situation is most encouraging and the United States Geological Survey estimate for the whole year is 80,000 tons of the high grade ore. This, however, is less than 20 per cent of the present large demand of the steel industry. Yet it is significant that the shipments of lower grade manganese ore likewise are record breaking, the 6 months of 1917 considerably exceeding the 12 months of 1916, and the present rate of production promises an even larger tonnage for the remaining 6 months. This gratifying activity in the mining of so essential an ore seems to be largely the result of better financing and better engineering of the industry, which in turn is simply another expression of how America is meeting the present crisis in American fashion."

## UTAH STATION WORKS ON INTRICATE ZINC PROBLEMS

During the past month the problem of obtaining marketable zinc oxide by precipitation of zinc sulphate solutions received further attention at the Salt Lake City station of the Bureau of Mines. Ten complete cycles of the proposed process have been run in order to see that impurities build up in the solutions. Zinc carbonate ores are mixed with strong sulphuric acid and heated to 600° C. This breaks up all colloidal silica, iron sulphates, and aluminum sulphate. The calcine is leached with a solution of calcium chloride, giving a solution of zinc chloride. This is precipitated with lime, giving zinc hydrate and a solution of calcium chloride for the next cycle. The regular methods of purification of the solutions used in electrolytic zinc work have proved acceptable for this work. The zinc hydrate formed contains 2 to 8 per cent lime, 1 to 5 per cent chlorine, and small amounts of sulphates. Upon calcining, the precipitate changes to zinc oxide containing 65 to 75 per cent zinc. No filtering difficulties have been encountered, and most of the products filtered with unusual ease. Counter-current decantations and washing during precipitation are now being investigated in order that less chlorides and sulphates will be left in the precipitate.

The investigations to determine the possibility of recovering potash from mineralized ores and from tailings or other products of milling operations were continued during the month. A careful study has been made of the division of potash minerals in the different products of milling and smelting operations in connection with the low-grade copper ores that are being mined and treated in Utah, Nevada, Arizona, New Mexico, and Montana. Potash balances for these metallurgical plants have been obtained. It was found that the slime tailings from all the milling plants contained the higher amounts of potash and that in several plants these slime products contained more than 6 per cent  $K_2O$ . Investigations are now in progress to determine the commercial possibilities of recovering potash from these finely divided slime products.

## FRANCE TO BUY COAL MINING MA- CHINERY IN THE UNITED STATES

The French government has announced its intention of purchasing coal mining machinery in the United States, so as to increase its coal output to the highest possible point. A mining engineer representing that government is expected to arrive in the United States soon to purchase the machinery and to discuss with American engineers the best means by which France can increase her coal production and how the mines in recovered territory can best be reopened.



### URGES TAXING OF MINERAL LAND HELD OUT OF USE

During the consideration of the revenue bill by the Ways and Means Committee, Congress was flooded with the following anonymous circular:

An annual tax of \$1 per acre-foot (or 1800 tons) on our coal deposits held out of use would yield over \$1,500,000,000 a year.

A tax of \$100 per acre on gas and oil deposits leased and held out of use would yield about \$750,000,000.

A tax of \$30 per acre-foot on iron and other mineral deposits and \$1 per acre on farming and grazing and forest lands held out of use and 20 per cent on the annual rentable value of vacant city lots would yield many billions of dollars.

Such taxes would reach speculators only, who now pay almost no taxes, and would break up the greatest evil of the age—the restriction of production—due to the fact that high rents and high prices of land make production unprofitable.

Unless such taxes are laid the suffering and death caused by high prices and low wages will be many times greater than that caused by war alone, our people will be poorly-nourished and weak and unable to produce what is needed, and therefore our nation could not put up its best fight—and defeat might be possible.

If such taxes are laid our own prussianism will disappear, all of our best lands will be put to use, monopoly will be destroyed, production will be enormously accelerated, giving employment to all labor at the highest wages possible, prices will fall to a minimum field by healthy competition, prosperity such as was never known will come to all, reaching down to the very poorest, in spite of the war drain; our people will be well-nourished and strong, and they will then be able to invent and forge weapons that will make our nation invincible.

Official reports show that 27,000,000 of our people are now deprived to a great extent of the necessities of life. Shall this number be increased to 97,000,000? Or shall we let all have opportunity to produce and get an abundance? One path leads to universal peace; the other to universal suicide.

This is no time for quack legislation. Our worst enemies are those short-sighted legislators who, because they fear that some of monopoly's "rights" may be infringed, propose and pass such, and thus drain the very life-blood of our people. Civilization itself is now threatened with destruction. Not since the world began was it ever in greater peril; and there is but one certain way to avert it.

The holding of land out of use must be prevented, or the holding of land out of use will destroy us.

### The Ballistic Pendulum

The ballistic pendulum is used to measure what is termed the deflective force of an explosive. A charge tamped with dry clay is loaded into a small cannon. The charge is fired against the pendulum, which is a mortar weighing 31,600 pounds, suspended by means of a stirrup from two cast-steel saddles fitting over a steel supporting beam that rests on nickel-steel knife edges. The amount of the explosive being tested that causes the pendulum to swing as far as will a charge of one-half pound of the Pittsburgh experiment station standard 40 per cent "straight" nitroglycerin dynamite is known as the unit deflective charge. It must be less than 1 pound (464 grams). This test indicates the coal-getting strength of an explosive.—Van H. Manning, in the Bureau of Mines Yearbook.

### URGES LICENSE FOR ALL WHO USE EXPLOSIVES

"The only way to prevent trouble is to make it a crime to have explosives in unlicensed possession. We should have a license system which should be very plain and simple; let a man go to the clerk of the county court or some official like that and get a permit and then he has a right to have explosives. The dealer should not sell to anybody who has not a license, and that license must be made as simple as possible without any red tape and with such regulations as are necessary printed on the back of it. When you have done that you have put no obstacle in the way of legitimate manufacturing business, and under the license system you can then cut down to a very great degree the illicit use of explosives."—Thomas M. Chataid before the House Committee on Mines and Mining.

### SECRETARY LANE APPEALS TO THE COAL OPERATORS

"I say to you the practical thing, the wise thing, the farsighted thing, the sensible thing, the thing that you will be proud of tomorrow and next year and twenty years from now, the best thing to do, and the American thing to do, is for you to put into the hands of some one or some small group the fixing of a low price upon coal and let the word go out that so far as the coal operator is concerned he is as much a patriot as any other man and he will make a sacrifice; he will not ask all the traffic will bear, he will not compel the Government to put its strong hand upon him and cause him to bring down the price, but he will rise up in the full dignity of his manhood and say 'Gentlemen, the coal mines of the United States are at your service. I ask you to leave me the opportunity to operate those mines and let me deal with the people of the United States, and I will prove that I can be fair.'"—Secretary Lane, at the Coal Price Fixing Conference.

### WORK ON REVISION OF MINING LAWS IS PROGRESSING

Tentative drafts of some of the suggested sections of a bill intended to revise the mining laws have been sent to each member of the committee. The committee consists of W. R. Ingalls, Hennen Jennings, James R. Finlay, L. D. Ricketts, J. Parke Channing, Walter Douglass and John Hays Hammond.

It is understood to be the intention of the committee to submit the drafts of the more important sections of the law to the public that it may have the advantage of criticism and suggestion before submitting to the committee on Mines and Mining the completed bill.

## Legal Decisions

The mining of ore is equivalent to manufacturing process in which the ore in place constitutes the raw material used. There is no more reason for allowing a lessee of a mine upon a royalty basis any deduction for depletion of ore in addition to the royalty paid than there would be to allow a manufacturer of lumber who has the right to cut and remove all the timber upon a certain section of land at so much per thousand feet a deduction in addition to the price per thousand paid, for depletion of timber for one year's cut. Each has a right to take all there is at a certain price per unit of measurement. Each is engaged in a manufacturing process, using raw material. Each is entitled to deduct from the cost of such material used as a part of the cost of the manufacturing process. The fact that an unascertained quantity is bought does not entitle them to a deduction for depletion any more than when a specified quantity is bought. Neither does the fact that ore is taken from under the surface of the earth change the situation. The price paid by the lessee of a mine for ore taken out measures the cost of the raw material to him in the form in which he takes it, and to this must be added the cost of mining and marketing, including depreciation to plant and other proper expenses connected with the business, to arrive at the total cost thereof; and when such total cost has been allotted he has been allowed all the cost that has been incurred.

Klar, Piquett Mining Co. *vs.* Platteville (Wisconsin), 157 Northwestern, 763, p. 764.

### IMPLIED CONDITION

Where an oil and gas lease was executed before any discoveries of oil or gas had been made on the leased premises and before there had been any discoveries or developments on adjacent lands, and the lease provided for payments of rentals as to certain stated period, in lieu of development, and where after execution of the lease wells are drilled on adjacent lands that make the drainage of oil and gas under the leased premises probable and the consequent loss to the lessor eminent, the law will then imply a condition for the development of leased premises by the lessee, on demand and notice from the lessor that he will refuse to receive further rentals, on the theory that where an implied condition will adequately protect from the results of a contingency where it is evident that parties did not intend to disregard, but for which they made no express provision, and will be less honourous to one of them than a covenant for such purpose would be, the principle of equity covering any construction and the limi-

tation of necessity upon addition by implication, make it the duty of a court to adopt the condition, not the covenant, as an unexpressed provision of the contract.

Carper *vs.* United Fuel Gas Co. (W. Va.), 89 Southeastern, 12, p. 16.

### RENTALS IN LIEU OF DEVELOPMENT

The oil and gas lease dated February 24, 1906, was for a term of ten years and as much longer as oil or gas should be produced, and bound the lessee to complete a well on the premises within three months within its date or pay a certain stated sum in advance for each three months of delay in the completion thereof, and provided for like postponement of development through successive periods within the term. By the terms of such lease and the lessor expressly assented to the delay in drilling and agreed to accept in satisfaction thereof specified pecuniary compensation, or he did in effect take a conditional covenant from the lessor to complete a well within a specified period or periodically in lieu thereof stipulated sums of money with like option to the lessee as to subsequent successive periods of like length. The lessee under the lease elected to pay the money instead of drilling and the lessor accepted such payments. Under such a lease and the acts of the parties thereunder the law will not import any implied covenant for diligent operation merely to make the lease profitable to the lessor, where as in such cases the delayed rentals provided for are deemed to be full satisfaction and compensation for postponement of operations. The fact that by postponement on neighboring lands the leased premises have become adaptable to successful mining operations cannot change the positive terms of the lease.

Carper *vs.* United Fuel Gas Co. (W. Va.), 89 Southeastern, 12, p. 14.

### OWNER AND OPERATOR

The statutory duty resting upon the operator of a coal mine to furnish his miners a safe working place cannot be applied to the owner or proprietor of a mine under the Indiana Statute (Sec. 8569, *et seq.*, Burns, 1914) where such owner or proprietor has leased the mine to a mining corporation and deprived himself of the power to exercise control and where he does not, in fact, have any control or anything to do with directing the active mining operations, and where the various statutory duties are expressly made to rest upon the operator. The owner is the operator only where he retains control of the mine or to the extent that he retains control of it or where it is being operated on his account.

Deep Vein Coal Co. *vs.* Reney (Indiana App.), 112 Northeastern, 392, p. 395.



## SUGGESTS NICKEL FOR KITCHEN WARE

**Frank L. Hess Points Out Many of the Remarkable Properties of This Whitening Alloy.**

The uses of nickel depend upon its properties of toughening, adding to the elasticity, whitening, or hardening, preventing the oxidation of certain alloys, to its own resistance to alteration under atmospheric conditions, its beautiful white luster, the high polish it takes, and the ease with which it is electroplated. As with all other metals its use depends on the fact that it is isolated from its ores with comparative ease and cheapness, says Frank L. Hess, of the U. S. Geological Survey.

The greatest use for nickel is as an alloy in steel. Of nickel steels, Stoughton says:

"Nickel steels are the most important of all the alloy steels and are the most abundantly used. In the ordinary commercial alloys the nickel ranges from 1.50 to 4.50 per cent, and usually from 2.00 to 3.75 per cent, while the carbon is usually from 0.20 to 0.50 per cent. Not counting armor-plate, which is really a quaternary steel, containing both nickel and chromium, the most important uses of nickel steel are for structural work in bridges, railroad rails, especially on curves, steel castings, ordnance, engine forgings, shafting, especially marine shafting, frame and engine parts for automobiles, wire cables, axles, especially for automobiles and railroad cars, etc., etc. We can best learn the reasons for these particular uses by discussing the distinctive properties conferred by the nickel and their usefulness.

"The chief distinction between nickel steel and carbon steel is the higher elastic limit of the former, and especially the fact that this higher elastic limit is obtained with only a slight decrease in ductility. About 3.50 per cent of nickel added to carbon steel will increase the elastic limit nearly 50 per cent, while reducing the ductility only about 15 to 20 per cent. It is this increase in elastic limit which is probably the chief reason for the increased resistance of nickel steel to what is known as "fatigue," that is to say, its resistance to repeated stresses and alternating stresses under which all steel will ultimately break down, even though the load is far less than that it can bear indefinitely if constantly applied. It is probable that the minute structure of nickel-steel is also advantageous in this same connection. About 3.50 per cent of nickel will give steel approximately six times the life in resistance to fatigue. The records of shipping show that the great majority of accidents to vessels at sea come from the breaking of the propeller shafts which is doubtless due to alternate stresses because these long shafts are put out of alignment by each passing wave; so now practically all large vessels use hollow nickel steel shafts. It is the higher elastic limit that is responsible also for the use of nickel steel in bridges, ordnance, automobile

parts, and wire cables, for we may obtain equal strength with less weight or greater strength with the same weight. Besides the elastic limit the ultimate tensile strength of nickel steel is increased also by the addition of nickel. The increase is not so great in this particular, and consequently the elastic ratio, *i. e.*, the ratio of the elastic limit to the tensile strength, is increased still more greatly. The elastic limit of ordinary rolled carbon steel should be at least one-half of the tensile strength, while that of 3.50 per cent nickel steel should be at least 60 per cent."

The crystalline structure of nickel is more minute, the modulus of elasticity is about the same as that of carbon steel and its hardness is greater, Mr. Hess says.

The alloy of iron and nickel known as "invar" is called a steel. Invar containing 36 per cent of nickel is practically without expansion or contraction when exposed to varying temperatures. It is used for scientific instruments, pendulums, and steel tapes.

An alloy of 25 per cent nickel and 75 per cent copper is used in the 5-cent piece or "nickel" of United States coinage. This coin illustrates the whitening effect of nickel in alloys. Some other countries use pure nickels for their subsidiary coins.

Monel metal is an alloy of nickel and copper made by the International Nickel Co. by smelting the Sudbury ores without separating the two metals. As stated by the Bayonne Casting Co., the composition is 67 per cent nickel, 28 per cent copper, and 5 per cent other metals, probably mostly iron and a little cobalt. It has a tensile strength equal to good nickel steel, resists many corrosive agents, has a color and takes a polish equal to that of nickel. It is used for propellers for warships and smaller craft, including racing motor boats; for valves on high pressure steam lines; valve stems; pump rods and liners; acid pumps; burning points in enameling and japanning ovens; pickle frames and rods in tin plate mills; wire cloth; golf club heads; and roofing materials.

Considerable quantities of nickel are used in the alloy known as German silver—composed of nickel 6 to 32 per cent; copper, 40 to 67 per cent; and zinc, 13 to 31 per cent. It is used direct for tableware and other utensils and as a base for silver plated ware.

Nichrome is a proprietary name for an alloy of nickel and chromium which was first used for resistance wires in electrical work. It stands temperatures considerably above a red heat with little oxidation and without melting so that it is used in small resistance furnaces in place of platinum, chemists' triangles, etc. It is also used in annealing pots and wire cloth for dipping baskets where articles are to be dipped in acid solutions.

Great quantities of nickel are used for plating iron and other articles where a beautiful protective finish is desired.

It seems odd, Mr. Hess says, that with its toughness, resistance to corrosion, and good color, pure nickel cooking utensils are not manufactured.



### IMPORTANCE OF CANNEL COAL IS INCREASING, ASHLEY FINDS

Cannel coal is one of the richest of known substances in its content of the hydrocarbons that are demanded by growing chemical industries, says Geo. H. Ashley of the Geological Survey. These hydrocarbons are now obtained by the distillation of oil and as a by-product in the destructive distillation of coal. The primary products of this distillation of coal are artificial gas and coke or coke alone; the primary by-products are tar, ammonia, and benzol. The facts that cannel coal does not yield a coke that may be used for the purpose for which most coke is now marketed and that its cost has been about double that of the coals now used for making gas or coke have heretofore prevented its employment as a source of gas or coke. The recent increased demands for these by-products, however, is putting them into the class of primary products, and if the demand continues to increase as it has of late new and independent sources of hydrocarbons must be utilized. This fact has recently led to an increasing number of inquiries of the United States Geological Survey regarding cannel coal.

Cannel coal is mentioned incidentally in a great many publications but in most of them only as a matter of curiosity, and even if it may be mentioned in the text of a book it has seldom been noted in the index, so that in reviewing the literature it has been necessary to go over many books page by page. Most of the longer memoranda on the cannel coal of this country were made during or just after the period of great interest in cannel coal, between 1855 and 1860, or just before the discovery of our great reservoirs of petroleum. At that time it was the principal source of our oil supply, nearly 60 distilleries being in operation in the United States in 1860. The discovery of rock oil naturally knocked the bottom out of the "coal-oil" industry, but the new growing demand for hydrocarbons may lead to a revival of the mining of cannel coal. In this connection it is desirable to call attention to a fact that all so-called cannel coals are not equally valuable for producing oil and gas, notwithstanding the prices at which they may now be selling for use in grates; two cannel coals may be of equal value for use in grates and may therefore now bring the same price, but one may have twice the value of the other for distillation for oil or gas.

#### Library Committee Named

The following members of the Bureau of Mines have been appointed by the Director to serve as a library committee for the Washington office of the bureau:

George S. Rice, chief mining engineer, Charles L. Parsons, chief chemist, Frederick G. Cottrell, chief metallurgist, and Chester Naramore, chief petroleum technologist.

### IMPORTANT PRODUCTION OF QUICKSILVER EXPECTED FROM NEW DISTRICT IN ARIZONA

Rapid expansion of quicksilver mining in the Phoenix mountains of Arizona is expected by F. C. Schrader, of the United States Geological Survey. Mr. Schrader recently made a geological study of the principal three lodes which lie within ten miles of the city of Phoenix. The geological conditions are such as to impress Mr. Schrader with the possibilities of mercury production from this area.

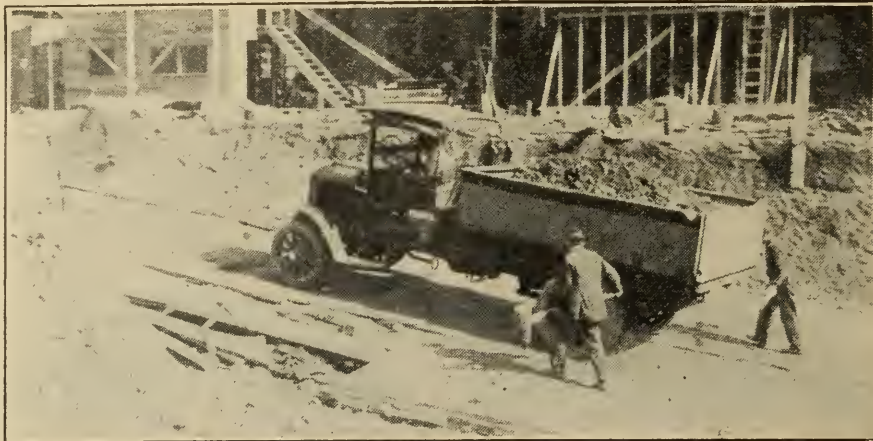
#### Rules and Regulations for Metal Mines

Along the line of uniformity of mining laws and regulations the bureau takes pride in saying that in connection with the efforts of the American Mining Congress there has been worked out and given to the public uniform rules and regulations for metal mines. As early as 1906 the American Mining Congress appointed a committee consisting of W. R. Ingalls, chairman, J. Parke Channing, James Douglas, James R. Finley, and John Hays Hammond to draft a modern law governing quarrying and metalliferous mining which could be recommended to the several States for adoption, in the hope that the passage of such a uniform law would tend to lower the number of fatal and serious accidents. This committee, after the organization of the Bureau of Mines, worked in harmony with the bureau and has recently reported a draft of an ideal metalliferous mining act, including a general system of rules for the control of all metal mines, with general safety precautions. The bureau has the satisfaction of knowing that the rules and regulations thus recommended have been adopted by operators of some of the largest mines in the metal-mining States, and it is believed that sooner or later a substantially uniform law will be enacted by the several States.—Van H. Manning, in the Bureau of Mines Yearbook.

#### Returns from Field Trips

E. F. Burchard, geologist, of the U. S. Geological Survey, in charge of investigations of iron ores and nonmetallic resources, returned to Washington July 2 from a 5-weeks trip in which he visited cement manufacturing districts in the Lehigh Valley of eastern Pennsylvania, northern New York, Illinois, Kansas, and Oklahoma, and iron ore areas in Iowa, Missouri, and Texas. Incidentally he conferred with the local representative of the U. S. Geological Survey at Minneapolis, E. C. Harder, and with State Geologist W. H. Emmons, in regard to certain problems in Survey work on iron and manganese ores in the Cuyuna Range of Minnesota.





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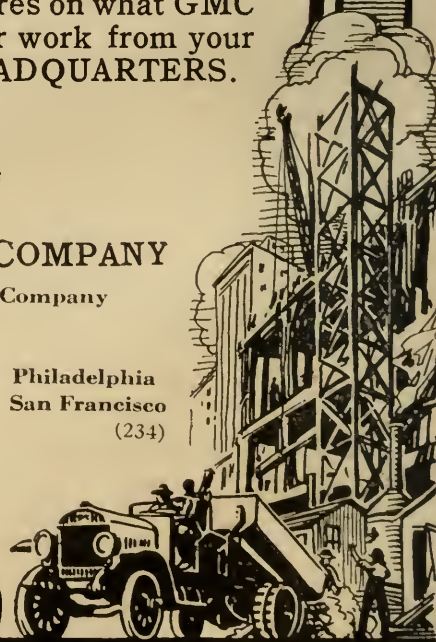
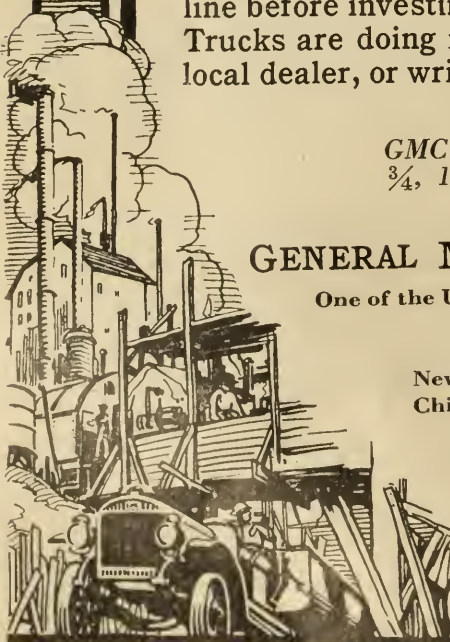
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# THE MINING CONGRESS JOURNAL

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No. 9



DR. HARRY A. GARFIELD  
The New Fuel Administrator

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BUTTE MONT

May 25, 1917.

Bemis Bros. Bag Company.  
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Gentlemen:

The Butte & Zenith City Mining Company several months ago as an experiment decided to try Flexoid canvas tubing in its shaft sinking operations. The results were so satisfactory, both in the way of costs and in the larger amount of work accomplished per shift, that we have gradually extended its use to all of our drifts, cross-cuts and underground workings.

The problem of proper mine ventilation has ever been a serious one, but our experience has been that Flexoid renders it a comparatively simple, easy and quick matter.

Yours very truly,

*W. H. Johnson*  
Superintendent.

## **BEMIS BROS. BAG CO.**

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# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## AN EXAMPLE AND AN APPEAL

At every annual convention of the American Mining Congress held for several years past the enthusiasm of the convention has led various members to offer their services in building up the organization by adding to its membership. Most of this enthusiasm has not culminated. Membership committees have failed in their function.

A new campaign is under way. A new era has been begun by the very effective work of Dr. Henry Mace Payne, who, having a few weeks' time between professional engagements, devoted it to the Mining Congress work, adding through his personal effort more than one hundred active members and eight life members to the Mining Congress membership roll.

Why should not each member of the Mining Congress take the same interest? Will you, brother member, undertake to get one member during the next month, in order that in our next month's issue we may publish a list of new members, bringing an equally powerful addition to the influence of the Mining Congress? Let each member get a member. Elsewhere in this issue will be found an application blank. Will you, brother member, follow the good example?

## A DEPARTMENT OF MINES AND MINING

The need of a department of mines and mining, with its head a member of the President's Cabinet, has never been more forcibly illustrated than in the present situation and during the present

crisis. The Bureau of Mines has done splendid work, but the influence of the mining industry in the nation's councils has of necessity been presented to the Executive through agencies with only a long-distance acquaintance with the industry.

The importance of mining to the nation's welfare is not recognized. The treatment of the industry by the National Government is not and never has been fair. The mining industry has been the goat upon which the sins of all other industries have been loaded.

It is hoped that the nation will learn its lesson without the intense punishment which seems to be necessary to educate the public in a new line of thought. Mining is the most important business of the nation. It should be first at the council table of the national administration.

When will the nation awaken to the great importance of the creation of a department of mines and mining whose head shall be a member of the President's Cabinet?

## DRY NOW; EAT NEXT WINTER

A clever and extremely serviceable bit of advertising is being sent out by the American Steel and Wire Company as a weekly report on crop conditions. In addition to a comprehensive crop report, other features of special interest are included. Its report for the week ending August 11, 1917, in addition to urging its readers to send to the Agricultural Department, Washington, D. C., for Farmers' Bulletin No. 841, giving



directions for the drying of fruits and vegetables, it also gives a sketch and directions for converting a hotbed sash and a box into a very satisfactory dryer. It may seem a long call from steel wire to dried potatoes, but the American Steel and Wire Company is far-sighted enough to understand that its prosperity depends upon the general prosperity of the country, which in turn depends upon a sufficiency of food, and that the preservation of fruits and vegetables which might otherwise be wasted is of vital importance to steel manufacturers.

### INDUSTRIAL SLAVERY

A large part of the cost of all strikes must in the end be paid by the consumer. When strikes are primarily for the purpose of forcing unwilling employers to pay proper wages or for the purpose of enforcing conditions in which a willing employer will be able to allow the demand of the wage-earner, the consumer should be willing to shoulder a part of the expense for the general good. But when the sole or the most important issue is the recognition of the union, it is extremely unfair that the consumer shall be required to assume the burden. At this time strikes are unusually prevalent. In many instances the chief issue is the recognition of the union, which, as a rule, means the right to say that no man who is not a member of the union shall be permitted to work. In many instances the demand is for the complete recognition of the union, the adoption of the check-off (*i. e.*, the collection by the employers of all dues and assessments levied upon the workmen by the union), and the closed shop.

These demands mean that no man shall be permitted to earn a living for himself and his family except upon condition that he shall be a member of the union. *THE MINING CONGRESS JOURNAL* believes that the independence of the American workmen is more important than any other issue which can arise in any industrial controversy. It believes that the right "to work and receive wages" is inherent to every man, whether he is a member of the union or not. It

believes that the requirement that any man shall or shall not be a member of any organization in order that he may perform his duty as a citizen is subversive of his liberty and constitutes a dangerous form of industrial slavery.

Few strikes have ever been won where public sympathy has been against the strikers, and few strikes have been lost where the cause of the strikers has been endorsed by public sentiment. This is as it should be, and it is therefore important that the public shall fully understand the issues involved, because the human side of these controversies must not be lost to sight. The consumer has an interest, the general public has an interest which must be taken into account, and in the end such settlement made as will make for the greatest public good and for the most complete industrial liberty of all toilers in the ranks of America's industrial life.

### CLOSING OF SMALL MINES

It is freely admitted by those in administration circles who have had to do with the fixing of coal prices that the price fixed will undoubtedly close a considerable number of small mines, but the hope is expressed that the men employed in these mines can find employment in the larger mines, where facilities of production are such as to make their work more effective, and that the railroad companies can furnish cars more easily to a few large mines than to a larger number of large and small mines combined.

To meet the present stress, all the mines, both large and small, should be operated to their fullest capacity. The closing of the small mines in any considerable number is the wiping out of that margin of production which marks the difference between a sufficiency of coal and a coal famine. The destruction of the business of the small operator is a standing menace to future conditions after the present exigency has passed. There are those who believe that the law of supply and demand, now temporarily set aside as to coal, will become permanent because of that fact that cheap coal

will be furnished to a public which had grown to believe that coal at very high prices was inevitable. Let us hope that this may be the beneficent result. It is not, however, a long stretch of the imagination to anticipate a shortage of coal so intense that the question of price will be most unimportant and that the great question will be to get coal at any price and under any condition.

It is inconceivable that a dozen men with no previous knowledge of the coal business can succeed in a plan which the mature judgment of thousands of men with a life-long training in the coal business and actuated by the highest patriotic motives agree to be impossible. Unless THE MINING CONGRESS JOURNAL is much mistaken, the old adage, "Providence tempers the wind to the shorn lamb," will have ample opportunity for again demonstrating its truth before the coming winter is over.

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### THE PUBLIC LANDS QUESTION

For many years the American Mining Congress has been protesting against the proposal of establishing a Federal leasing system as the sole method under which the mineral lands and water powers of the United States could be operated. It has insisted in season and out of season that such a system was wrong; that it would prevent development; that it would keep from the taxing power of the newer states most valuable property, and that it would foster monopoly in the hands of those who are already in control of property acquired under the public land system. The Mining Congress has particularly protested against the kind of administration which deprived individuals of rights acquired in accordance with the construction placed upon the mining laws and who had invested large sums in the development of mining and water power properties, as nearly as possible in accordance with the departmental construction of the public land laws.

The result of this general protest against a Federal leasing of mineral lands has been to transform the radical and restrictive leasing measures first

proposed to a leasing bill fairly liberal in its provisions and providing that these conditions shall operate side by side with the present land system, under which patents may be granted under proper conditions to those who require a stable title as a basis for investment. On another page will be found a synopsis of the compromise bill, approved by practically all western interests, and which seems likely to be enacted by Congress during the current year. THE MINING CONGRESS JOURNAL congratulates the West and those who have fought in this contest upon the fact that out of all the agitation a bill has been developed which is fairly satisfactory to all interests.

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### WESTERN MINE DEVELOPMENT

THE MINING CONGRESS JOURNAL has repeatedly urged the great need of exploitation companies for the purpose of developing prospects, and has pointed out the importance of having other metal mines available for the utilization of capital, brains and energy now employed in these mines which sooner or later will be exhausted. It has pointed out the importance of contemporaneous development of a large number of prospects in order that such an average may be secured as will insure that some among the whole will be developed into paying properties, thus recompensing the loss which unsuccessful development of other prospects entail.

The manufacture of mines (the development of prospects), offers a field giving promise of large profits to capital and also bringing benefit to the communities in which the development work is done. The West offers numberless opportunities for such investments. The larger mine development companies have been most successful in enterprises of this kind.

It may be urged that these have taken the cream of offerings and that what remains may not justify investment. If this were true these companies would not still be on the hunt for other opportunities. It is also true that because these companies have rejected an offering is not proof that it does not possess



merit, but only that at the price offered it did not appeal at that time.

Such a prospect might be most desirable for a smaller company, or at a time when the demand is greater for its product. One great drawback to eastern investment in western mines is the fact that many promoters have taken advantage of the fact that investors could not make proper investigation of the conditions surrounding an offering except at a greater expense than a small investment would justify.

The Utah Chapter of the American Mining Congress has developed a plan which was presented in the August issue of the MINING CONGRESS JOURNAL to meet this situation. It is hoped that other State Chapters will take up this work and that through the National Organization a complete clearing house may be developed. The Mining Congress will gladly render any possible service in this direction.

To quote the Engineering and Mining Journal: "Not only is the field of opportunity not barren, but there is a marked need of an exploitation company for the handling of comparatively small properties."

### THE PRICE OF COAL

The fixing of a maximum price upon coal and a minimum price upon wheat emphasizes the distinction in the public mind between mining and farming.

For years dollar wheat was the ambition of the wheat-raising farmer. During these years, when wages and operating costs were much lower than now, the cost of the labor and supplies involved in the production of coal was considerably in excess of \$1 per ton. The cost of coal production has increased very much more in proportion than the cost of raising wheat.

Coal is an absolute necessity in our industrial life. Wheat is very important, but not a necessity. There are plenty of substitutes for wheat, but absolutely no substitute for coal. Yet a minimum price of \$2 per bushel is fixed for wheat and a maximum price of \$2 a ton is fixed for coal, with slight variations governed by locality.

It is true that the public should be supplied with coal at the lowest cost possible, granting a proper wage to the miner and a fair profit to the producer. But THE MINING CONGRESS JOURNAL contends that the price fixed by the administration does not leave a fair profit to the producer after paying fair wages and providing the necessary overhead charges for depreciation of mining plants and for the exhaustion of mining property except in the very large mines. These mines will produce approximately five hundred million tons of coal if transportation facilities are provided. This will leave the country fifty million tons short of the necessary amount which must be produced at a loss if a coal famine is to be averted.

The writer has not and never did have any personal interest in coal production, and his only interest in the price is that of the buyer. The writer has a considerable interest in the price of wheat as a producer, and every personal interest would approve the minimum price upon wheat and the maximum price upon coal, but an interest broader than the personal interest forces the conclusion that the action of the administration in this matter is dangerously wrong. What the country needs today is to stimulate the highest possible production. The hope of profit is the only incentive which has ever induced business enterprises, as a whole, to speed up production. Patriotic motives will undoubtedly stimulate a large percentage of coal operators to produce the highest amount possible, even though the profits are practically eliminated by the price fixed by the Government; but can anyone be foolish enough to suppose that new mines are to be opened, that increased development is to be carried on, that new machinery of production is to be created in order to supply a temporary need for fuel, when it is almost certain that the machinery thus created will be useless as soon as the present emergency is passed? Will the 50,000,000 tons of coal in addition to ordinary production which this country will absolutely require to prevent a coal famine be provided by these conditions?

Will our railroads be forced to commandeer coal which is offered for shipment over their lines in order that they may operate trains to carry the minimum-priced wheat to the central markets? Will the poor of our great cities, unable to buy this wheat because the manufacturing plants which furnish employment are closed for lack of coal, commend the monumental foolishness of those who cut off the supply at its source? Truly we are embarking upon a sea of uncertainty. A coal famine under any circumstance would be a great calamity, but a coal famine brought about by the idiotic belief that one man without business training in any big business undertaking can know more about the management of a huge enterprise than five thousand men whose lives have been devoted to a practical study of its problems would be a national humiliation.

(NOTE: Since dictating the above a letter came to this office, from which we quote: "The purpose of this company was to develop on a pretty large scale, but on account of the agitation against the coal business and the probable Government interference, we have decided to await the passing of the storm of indiscretion now so seriously threatening the coal business.")

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## A GROWING MINING

### ORGANIZATION

With the election of Mr. George H. Crosby, of Duluth, as a director and vice-president of the American Mining Congress, intensified interest in the problems of the iron ore industry became assured. In the recent campaign for the organization of an iron chapter of the Congress practically all of the large corporations and independent operators in the Duluth district took memberships in the Congress for themselves and their various subsidiaries. The ore-carrying transportation companies, in similar manner, have recognized the fact that the American Mining Congress today is the strongest visible link between the operator-producer and the Government, and are participating in the deliberations of the Congress in earnest anticipation that a solution may be found for many of the present problems in that district.

In years past gold and silver, lead and zinc, copper and coal have occupied prominent places in the programs of the Congress' sessions, and there is no reason why, with the enormously strong representation which the iron and steel industry now have in the Congress, the new Iron Chapter should not become a potent factor in the affairs of the Congress and at the same time receive much benefit from the sympathetic cooperation of the other branches of the mining industry.

Until recently the oil industry has felt that its problems were specifically exclusive, but at the last session of the American Mining Congress, in Chicago, about 25 per cent of the papers discussed were related to petroleum and its problems. This situation and its past achievements induced the leading operators of California to volunteer their support for an oil chapter of the Congress, and the memberships recently acquired in California are the nucleus of what promises to be another strong adjunct in our national work.

The anthracite coal mining companies of Pennsylvania, in similar manner, have joined their bituminous brethren in a concentrated endeavor to improve coal mining conditions generally; and to summarize, it might be said that at the present time, as never before, all branches of the mining industry are cooperating heartily through the Congress toward securing the fullest measure of relief from various oppressive conditions and toward assisting the Government in the fullest measure possible in all proper and practical lines.

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## THE OIL SITUATION

One of the great national problems which will present itself in a forcible way in the not distant future is the production of petroleum. The use of gasoline as a motive power is increasing with great rapidity. Actual war progress at the front cannot go on with perfect effect without the use of very large quantities of gasoline.

In order that the present demand shall



be met there must be a continually increasing number of producing wells developed. To supply the increased demand occasioned by the war situation will call for a largely increased development of oil wells. The Requa-Haseltine-McQuigg report in California shows that the average well the fourth year only produces one-half as much as the first year; that the average life of a well does not exceed thirty years, and that after the tenth year the production is comparatively negligible. According to the report of the committee on petroleum of the California State Council of Defense, the production in that state for 1916 amounted to 13,200,000 barrels more than was consumed; during the first five months of 1917 the consumption exceeded the production 5,415,000 barrels, or approximately 35,860 barrels per day. When we add to this the additional demand for military use, it will be readily seen that some effort must be made to stimulate the development of oil wells if the present consumption is to be continued and the war demand met.

It is true that a large saving of gasoline can be effected by greater economy on the part of automobile users, but even this would not ordinarily be sufficient to meet the increased demand for industrial and military purposes. It is estimated that to meet the present shortage and to make up the shrinkage in production of the present wells in California would require the bringing in of 800 additional wells, and no one yet has been able to predict how many additional wells would be required to meet the increased demand for military purposes.

In other words, in the state of California alone there should be drilled during the present year from one thousand to two thousand producing oil wells. The average cost of drilling a well during the past in the shallow field, say, 1,000 feet, has been approximately \$7,500. One thousand wells at the old-time prices would cost approximately \$7,500,000. Including the cost of dry wells to bring in 1,000 producing wells at present prices would require an ex-

penditure during the year of approximately \$15,000,000.

This, then, is the absolute necessity if the nation's demand for petroleum products is to be met. At the present time contracts cannot be made for oil well casing for delivery within eighteen months, nor at prices less than 100 to 300 per cent advance upon the regular prices. The failure to include oil well casing as a war material has made utterly impossible the development of the oil wells which are essential to meet our national necessity. The situation in California is more or less typical of the nation's condition. The Council of National Defense may well give grave consideration to the serious problems involved in the future of the petroleum industry.

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### WORSE THAN A DESERTER

The necessity for increased production in all lines makes particularly dangerous the increasing number of labor strikes in various parts of the country. The great world war for democracy cannot be won except food, fuel and war munitions are produced in largely increased quantities. To accomplish this in normal times would require a speeding up of industrial processes; to accomplish it during present conditions will require that every productive agency shall work under pressure all of the time. The great business of the country is to win the war. All patriotic citizens are willing to set aside their rights of personal liberty so far as necessary to enable the Government to most effectively meet its necessities. This duty rests in an equal way upon all citizens. It does not require the wage-earner to continue to work at old-time wages when the necessities of life have so increased in cost that even with the greatest of economy and prudence he is unable to properly support his family. Unless some other method is available by which this inequality can be righted, the strike is justifiable. Organized labor should endeavor to provide a different method.

The nation requires continuous service. The workman needs continuous employment. The employers' profits de-

pend upon continuous operation. Every interest involved can be best served by an orderly settlement of the dispute. All other disputes are settled by arbitration or judicial determination. Why not labor disputes? Is it because the direct parties to such disputes feel able to gain by force more than can be hoped for through a fair arbitration? This motive, if it exists, should not be tolerated for a moment at any time, and particularly at the present time, when the lives of our soldiers in the trenches and the success of our nation in its fight for world democracy depends upon the food and supplies which will not be available except each loyal citizen shall perform his best service and his full duty. The public interest should now be accepted as supreme, and at this time the man who chooses to strike for increased wages when any other method is available by which he can secure redress is entitled to the same public approbation as the deserter from military service. This only upon the theory that some other method of redress is available. If no such remedy exists, then it is the duty of the Government to provide such remedy, and he who opposes such legislation is worse than the deserter.

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#### ABOUT THE COAL TRADE

A recent contribution to the *Washington Post* by Ryley Grannon, under the title of "War Costs a Menace," says that the strong men in the Government "have discovered that the coal producers 'put one over' when they agreed to sell for \$3 a ton, and the copper producers also 'put one over' when they agreed to \$16.50 a ton. In each case the profits are more than 100 per cent."

This statement is not only false, but its publication has a tendency to create conditions which will leave our armies at the front defenseless and our people at home in want. Coal and copper are two of the prime necessities of the war. Copper even is worthless without coal.

The country will need at least 50,000,000 tons of coal more than has ever been produced, and a failure to produce this additional amount will be disas-

trous. Labor is scarce and becoming scarcer; transportation facilities will not be adequate to meet the increased demand for service, when winter arrives, unless all facilities for the storage of coal at points remote from the mines are utilized during the summer months. Dealers cannot be expected to buy and store coal when a lower price is promised for the future.

Transportation companies must be urged by every possible reason to distribute as rapidly as possible to the centers of consumption. Coal producers of the country must be urged by every possible reason to stimulate the highest possible production.

For six years prior to the beginning of the war bituminous operators had been selling their coal at an average loss of 10 cents per ton on the total production in the country. During these years hundreds of coal producing companies had gone into bankruptcy. In Pittsburgh, the great coal producing center, three of the largest companies were in receivers' hands. The bituminous coal trade was on the verge of bankruptcy and collapse. Most producers were tied up with long-time contracts at low prices which could not be and were not broken. The small amount of free coal (coal not under contract) was entirely inadequate to meet the increased demand, and buyers were clamoring for the privilege to buy this small percentage of remaining free coal at enormously high prices.

This was the condition when the Coal Committee of the Council of National Defense invited the coal operators to convene in Washington, at which time they agreed to accept less than half the market price for such coal as was available for delivery, and this notwithstanding the fact that this was the first opportunity to meet the deficit which had been created by six years of business loss.

With this statement of fact, instead of criticising the coal operators for their course, instead of accusing them of sharp practice and of taking advantage of the nation's necessities, they should be given credit for almost superhuman good intention, denying themselves the



right to reimburse themselves for the benefit of people who had taken the advantage of their losses during the years referred to, and agreeing to a maximum price of \$3 per ton for domestic consumption and \$2.50 per ton to the Government.

What the country needs is an immediate increase of coal production and distribution. It needs that more than any other one thing, and in the face of largely increased cost of supplies, a shortage of labor, a lack of proper transportation facilities, surely the coal operator must not in addition to these handicaps be burdened with an unjust and ungrateful public criticism.

Dealers and large users must lay in adequate supplies. Domestic consumers must be stimulated to provide for probable needs, and this must be done now to insure against want during the coming winter. Abnormal production and abnormal distribution must begin at once. There need not be a coal famine if the orderly conduct of production and distribution is not interfered with.

### LIKE RED PEPPERS

"Take the Sherman anti-trust law and hang it up on the back porch like a string of red peppers, and let it hang there until the war is over." This is the expression of a prominent manufacturer when his opinion on the subject was asked recently by a high Government official.

### SON OF FORMER PRESIDENT MADE COAL ADMINISTRATOR

Dr. Harry A. Garfield, the new coal administrator whose cut appears on the outside cover of this issue, was born in Hiram, Ohio, October 11, 1863. He is the son of James A. Garfield, one of the martyred presidents of the United States. He is an alumnus of Williams College of which he is now the president. He is nationally known as an educator and a lawyer. His class in politics at Princeton University was one of the most popular classes in that institution. Dr. Garfield was the organizer of the Lake Erie Alliance and Wheeling Coal Company which developed a large acreage of virgin coal land in the No. 8 district of Ohio. The property is now conducted by the Jefferson Coal Company, which is operated by the New York Central.

## IRON REGION TO HAVE EXPERIMENT STATION

### Minneapolis to Be Site of New Bureau of Mines Station—To Study Treatment of Low-Grade Ores

Secretary of the Interior Lane has authorized the establishment of a mining experiment station at Minneapolis, Minn., under the jurisdiction of the Bureau of Mines, the station to represent the iron mining districts.

Director Van H. Manning, of the Bureau of Mines, in making his recommendation that such a station be established at Minneapolis, said: "The bureau should as soon as possible give attention to the treatment and concentration of low-grade iron ores, with the purpose of increasing the iron ore reserves of this country by making available those low-grade ores which at present cannot be economically smelted.

"Vast as are the ore reserves of Minnesota, at the present rate of production the high-grade ores now developed will be almost exhausted within thirty years. However, there are huge deposits of lower-grade ores not now utilized, and these will become of great value if their treatment can be made profitable. Some important problems that must be solved if the high standards of the mining industry are to be maintained are:

"The concentration of the hematite ores, carrying from 35 to 50 per cent iron, which are now practically worthless.

"The concentration of great quantities of magnetite ores, particularly those on the east end of the Mesaba Range.

"The utilization of titaniferous ores that occur in considerable abundance in northeast Minnesota. Owing to metallurgical difficulties, these ores are not now utilized.

"The concentration of the low-grade manganese ores of the Cuyuna Range. If these ores could be concentrated and their phosphorus content decreased, they would be very valuable, whereas they are not now utilized to any great extent."

The new station will work in cooperation with the School of Mines of the University of Minnesota, which is located at Minneapolis.

### LABOR SHORTAGE AND STRIKES HAMPER PRODUCTION OF COAL

The decline in output of coal is chiefly to be attributed to a relative increase in labor shortage and strikes. In Illinois this factor, limiting production, rose from a normal level of 4 per cent to more than 16 per cent of the full-time output. In Kansas also scattering strikes continued to limit production. The dull market in Iowa was obscured during the week ended August 11 by a sharp increase in car shortage and losses due to labor.—*From the Geological Survey's Weekly Coal Report.*

## COAL PRICES FIXED BY EXECUTIVE DECREE

### President Wilson Cuts Prices One-third Below That Fixed Voluntarily by the Operators

Without question, the past month has been one of the most notable in the history of the coal mining industry. The President of the United States has fixed the prices of bituminous and anthracite coal and has specified the margin which jobbers may allow for their profit. He has named a coal dictator, who is clothed with ample powers to control prices of coal so as to insure its reaching the consumer without more than reasonable margins being collected by retailers.

From the time that the legislation authorizing the President to fix prices and control fuels became a law, there has been great uncertainty as to what steps would be taken. Prior to the President's order it had been anticipated that the matter of price fixing would be left until after the appointment of the coal administrator, so that that official could pass upon the conclusions reached by the Federal Trade Commission as to costs. There was great surprise consequently when the President himself announced the prices which are about to follow. At first it was thought the President intended to place a board composed of three men at the head of the fuel administration. It had been suggested to the President by very influential persons that a board consisting of Francis S. Peabody, chairman of the committee on coal production; William B. Colver, of the Federal Trade Commission, and John P. White, president of the United Mine Workers of America, be named. It is said that this plan received the careful consideration of the President. From the first, however, he leaned toward a one-man administration, such as had been provided for the control of foods.

When it became fairly well understood that the President was to appoint an individual to head the fuel administration there was much speculation, with considerable display of nervousness, as to who it would be. It can be said with all truthfulness that great relief was felt among coal operators present in Washington when it was learned that Dr. H. A. Garfield had been selected for the place.

President Wilson's official statement as given out at the White House is as follows:

"The following regulations shall apply to the intrastate, interstate and foreign commerce of the United States, and the prices and margins referred to herein shall be in force pending further investigation or determination thereof by the President."

#### JOBBER'S MARGINS

1. A coal jobber is defined as a person (or other agency) who purchases and resells coal

to coal dealers or to consumers without physically handling it on, over, or through his own vehicle, dock, trestle, or yard.

2. For the buying and selling of bituminous coal a jobber shall not add to his purchase price a gross margin in excess of 5 cents per ton of 2,000 pounds; nor shall the combined gross margins of any number of jobbers who buy and sell a given shipment or shipments of bituminous coal exceed 15 cents per ton of 2,000 pounds.

3. For buying and selling anthracite coal a jobber shall not add to his purchase price a gross margin in excess of 20 cents per ton of 2,240 pounds when delivery of such coal is to be effected at or east of Buffalo. For buying and selling anthracite coal for delivery west of Buffalo, a jobber shall not add to his purchase price a gross margin in excess of 30 cents per ton of 2,240 pounds. The combined gross margins of any number of jobbers who buy and sell a given shipment or shipments of anthracite coal for delivery at or east of Buffalo shall not exceed 20 cents per ton of 2,240 pounds; nor shall such combined margins exceed 30 cents per ton of 2,240 pounds for the delivery of anthracite coal west of Buffalo. Provided, that a jobbers' gross margin realized on a given shipment or shipments of anthracite coal may be increased by not more than 5 cents per ton of 2,240 pounds when the jobber incurs the expense of re-screening it at Atlantic or Lake ports for trans-shipment by water.

#### ANTHRACITE PRICES

4. Effective September 1, 1917, the maximum prices per ton of 2,240 pounds free on board cars at the mines for the grades and sizes of anthracite coal hereinafter specified shall not exceed the prices indicated in paragraph 5 when such coal is produced and sold by the Philadelphia & Reading Coal and Iron Co., Lehigh Coal and Navigation Co., Lehigh and Wilkes-Barre Coal Co., Hudson Coal Co., Delaware and Hudson Co., Scranton Coal Co., Lehigh Valley Coal Co., Coxe Bros. & Co., Pennsylvania Coal Co., Hillside Coal and Iron Co., Delaware, Lackawanna & Western Railroad Co., Delaware, Lackawanna & Western Coal Co., Susquehanna Coal Co., Susquehanna Collieries Co., Lytle Coal Co., or the M. A. Hanna Coal Co.

5. The grades and sizes for which the maximum prices are specified are as follows. White Ash anthracite coal of the grades that between January 1, 1915, and January 1, 1917, was uniformly sold and recognized in the coal trade as coal of White Ash Grade; Red Ash anthracite coal of the grade that between January 1, 1915, and January 1, 1917, was uniformly sold and recognized in the trade as coal of Red Ash grade, and Lykens Valley anthracite coal that is mined exclusively from the Lykens Valley seams and of the grade that between January 1, 1915, and January 1, 1917, was uniformly sold and recognized in the coal trade as coal of Lykens Valley grade.



|              | White Ash<br>Grade | Red Ash<br>Grade | Lykens<br>Valley<br>Grade |
|--------------|--------------------|------------------|---------------------------|
| Broken . . . | \$4.55             | \$4.75           | \$5.00                    |
| Egg . . .    | 4.45               | 4.65             | 4.90                      |
| Stove . . .  | 4.70               | 4.90             | 5.30                      |
| Chestnut . . | 4.80               | 4.90             | 5.30                      |
| Pea . . .    | 4.00               | 4.10             | 4.35                      |

6. Producers of anthracite coal who are not specified in paragraph 4 shall not sell the various grades and sizes of anthracite coal at prices that exceed by more than 75 cents per ton of 2,240 pounds free on board cars at the mines the prices enumerated in paragraph 5. Provided, that any producer of anthracite coal who incurs the expense of rescreening it at Atlantic or Lake ports for trans-shipment by water may increase the price thereof by not more than 5 cents per ton of 2,240 pounds.

7. Producers of anthracite coal specified in paragraph four of these regulations shall not sell anthracite coal to producers of anthracite coal not specified in paragraph four.

8. Dealers and selling agents shall not sell coal produced by the producers included in paragraph four on the basis of the prices fixed at the mine for coal produced by producers not specified in said paragraph.

Woodrow Wilson.

The White House,  
August 23, 1917.

The price-fixing statement, as prepared at the White House and signed by the President, is as follows:

"The following scale of prices is prescribed for bituminous coal at the mine in the several coal producing districts. It is provisional only. It is subject to reconsideration when the whole method of administering the fuel supplies of the country shall have been satisfactorily organized and put into operation. Subsequent measures will have as their object a fair and equitable control of the distribution of the supply and of the prices not only at the mines but also in the hands of the middlemen and the retailers.

"The prices provisionally fixed here are fixed by my authority under the provisions of the recent Act of Congress regarding administration of the food supply of the country, which also conferred upon the Executive control of the fuel supply. They are based upon the actual cost of production and are deemed to be not only fair and just, but liberal as well. Under them the industry should nowhere lack stimulation."

NOTE:—Prices are on f. o. b. mine basis for tons of 2,000 pounds.

|                                   | Run of<br>mine | Prepared<br>sizes | Slack or<br>screenings |
|-----------------------------------|----------------|-------------------|------------------------|
| Pennsylvania.....                 | 2.00           | 2.25              | 1.75                   |
| Maryland.....                     | 2.00           | 2.25              | 1.75                   |
| West Virginia.....                | 2.00           | 2.25              | 1.75                   |
| West Virginia (New<br>River)..... | 2.15           | 2.40              | 1.90                   |

|                                      |      |      |      |
|--------------------------------------|------|------|------|
| Virginia.....                        | 2.00 | 2.25 | 1.75 |
| Ohio (thick vein)...                 | 2.00 | 2.25 | 1.75 |
| Ohio (thin vein)...                  | 2.35 | 2.60 | 2.10 |
| Kentucky.....                        | 1.95 | 2.20 | 1.70 |
| Kentucky (Jellico)...                | 2.40 | 2.65 | 2.15 |
| Alabama (big seam).                  | 1.90 | 2.15 | 1.65 |
| Jaeger and Corona                    | 2.15 | 2.40 | 1.90 |
| Alabama (Cahaba<br>and Black Creek). | 2.40 | 2.65 | 2.15 |
| Tennessee (eastern).                 | 2.30 | 2.55 | 2.05 |
| Tennessee (Jellico)...               | 2.40 | 2.65 | 2.15 |
| Indiana.....                         | 1.95 | 2.20 | 1.70 |
| Illinois.....                        | 1.95 | 2.20 | 1.70 |
| Illinois (third vein)...             | 2.40 | 2.65 | 2.15 |
| Arkansas.....                        | 2.65 | 2.90 | 2.40 |
| Iowa.....                            | 2.70 | 2.95 | 2.45 |
| Kansas.....                          | 2.55 | 2.80 | 2.30 |
| Missouri.....                        | 2.70 | 2.95 | 2.45 |
| Oklahoma.....                        | 3.05 | 3.30 | 2.80 |
| Texas.....                           | 2.65 | 2.90 | 2.40 |
| Colorado.....                        | 2.45 | 2.70 | 2.20 |
| Montana.....                         | 2.70 | 2.95 | 2.45 |
| New Mexico.....                      | 2.40 | 2.65 | 2.15 |
| Wyoming.....                         | 2.50 | 2.75 | 2.25 |
| Utah.....                            | 2.60 | 2.85 | 2.35 |
| Washington.....                      | 3.25 | 3.50 | 3.00 |

Dr. Harry A. Garfield, who has taken up his duties as coal controller, has announced that three cardinal principles will be observed. They are:

- 1. Fair treatment of operators under conditions which would stimulate production.
  - 2. Fair treatment of the jobbers, with restrictions which would prevent this branch of the trade taking advantage of the retailer.
  - 3. Fair treatment of the retailer, with restrictions, which would prevent exorbitant profits.
- "We will try," Dr. Garfield said, "to obtain coal for the consuming public without working undue hardship to any department of the trade, and we believe that much can be accomplished in this direction. Just what reductions are possible is a matter of conjecture; we must first get our organization into operation.
- "It is possible that a system of licensing will be adopted in order to obtain complete control of the situation in the interests of all, and this may be done largely on the plan worked out for the control of the wheat supply. In this way we could compel the jobbers to accept the ruling of the President as to the profits they shall make, as the license could be rescinded if conditions were not met."

The problem of controlling the retailer, Dr. Garfield admitted, is complicated, because of the many companies and individuals involved, but it can be stated that if necessary to prevent abuses a licensing system will be inaugurated also for that branch of the industry.

F. G. Cottrell, chief mining engineer of the Bureau of Mines, has left Washington for a two months' field trip. He will make the rounds of the mining experiment stations before returning to Washington.

## PRIORITY ORDER COVERS COAL FOR NORTHWEST

**To Meet Critical Situation, President Makes First Use of New Power Granted Ten Days Before.**

An adequate coal supply for the Northwest is insured by a priority order issued on instructions from the President. This is the first of these orders to be issued, and bids fair to become a historic document. It reads as follows:

"Whereas by the act of Congress entitled 'An Act to Amend the Act to Regulate Commerce, as Amended, and for Other Purposes,' approved August 10, 1917, it is provided that during the continuance of the war in which the United States is now engaged, the President of the United States is authorized, if he finds it necessary for the national defense and security, to direct that such traffic or such shipment of commodities as, in his judgment, may be essential to the national defense and security shall have preference or priority in transportation by any common carrier by railroad, water, or otherwise; and

"Whereas, by virtue of the power conferred upon him by said act, the President has designated the undersigned as the person through whom the orders and directions authorized by said act shall be given; and

"Whereas it has been made to appear, and the President through the undersigned finds that under present conditions and volume of shipment sufficient bituminous coal will not be transported via lake movement to Lake Superior and Lake Michigan ports before the close of navigation to supply the requirements of the territory contiguous thereto, which is necessarily dependent upon movement by lake for supply of bituminous coal, and that an adequate supply of bituminous coal in that territory is necessary for the national defense and security, and that a condition exists requiring the exercise of the powers vested in the President by the aforesaid act of Congress, approved August 10th, 1917, and conferred by the President upon the undersigned, as authorized by said act:

"First—Now, therefore, by reason of the premises, the undersigned, in the name of the President, orders and directs that the railroad companies named in subdivision 'Third' below, serving Lake Erie ports in the transportation of bituminous coal for transshipment by vessel to ports on Lake Superior and Lake Michigan, shall and they are hereby directed, until further order, daily to give preference and priority in the distribution of cars to coal mines served by them and transport the same so that bituminous coal for transshipment as aforesaid by lake shall have preference and priority in transportation.

"Second—It is further ordered that all common carriers by water engaged in ship-

ment of lake bituminous coal, as aforesaid, shall and they are hereby directed, until further orders, to accept and receive all cargoes of such coal tendered to them for shipment as aforesaid, and to so load, transport and deliver the same, that it shall have preference and priority in transportation.

"Third—The railroad companies to which this order and direction applies are:

"The Baltimore and Ohio Railroad Company; Campbell's Creek Railroad Company; Cherry Tree and Dixonville Railroad Company; The Chesapeake and Ohio Railway Company; The Cincinnati, Hamilton and Dayton Railway Company; The Cleveland, Cincinnati, Chicago and St. Louis Railway Company; Coal and Coke Railway Company; Cumberland and Pennsylvania Railroad Company; Dents Run Railroad Company; Detroit and Toledo Shore Line Railroad Company; Detroit, Toledo and Ironton Railroad Company; The East Broad Top Railroad and Coal Company; Erie Railroad Company; The Hocking Valley Railway Company; The Huntingdon and Broad Top Mountain Railroad and Coal Company; The Kanawha and Michigan Railway Company; Kanawha and West Virginia Railroad Company; Kittanning Run Railroad Company; The Lake Erie and Western Railroad Company; Lake Erie, Franklin and Clarion Railroad Company; Louisville and Nashville Railroad Company; The Monongahela Railway Company; Morgantown and Kingwood Railroad Company; The New York Central Railroad Company; The New York, Chicago and St. Louis Railroad Company; Norfolk and Western Railway Company; The Northern Ohio Railway Company; Pennsylvania Company; The Pennsylvania Railroad Company; Pere Marquette Railroad Company; The Pittsburgh and Lake Erie Railroad Company; Pittsburgh, Chartiers and Youghiogheny Railway Company; The Pittsburgh, Cincinnati, Chicago and St. Louis Railroad; The Sandy Valley and Elkhorn Railway Company; The Toledo and Ohio Central Railway Company; Toledo-Detroit Railroad Company; Toledo, St. Louis and Western Railroad Company; Wabash Railway Company; The Wabash Pittsburgh Terminal Railway Company; Washington Run Railroad Company; West Side Belt Railroad Company; West Virginia Northern Railroad Company; The Western Maryland Railway Company; The Wheeling and Lake Erie Railway Company; The Youngstown and Ohio River Railroad Company; The Zanesville, and Western Railway Company."

Judge Robert S. Lovett, member of the War Industries Board of the Council of National Defense, in charge of priority, was designated by the President as administrative officer under the provisions of the Priority Shipments Act, approved August 10. Judge Lovett on August 20 issued the order relating to priority of coal shipments to the Northwest.



Early in August it became apparent to Mr. Peabody that more drastic steps had to be taken if the Northwest was to obtain its full requirements of coal. He called in conference representatives of the railroads and the operators most concerned. That they concurred in his views is indicated by the resolution adopted. Some interesting facts in connection with the Northwest situation were brought out at the meeting.

A subcommittee reported as follows on August 14:

|                                                                                                            |            |
|------------------------------------------------------------------------------------------------------------|------------|
| It was determined that aggregate tonnage to move during the season of 1917 was .....                       | 29,000,000 |
| There has been forwarded to August 11, inclusive .....                                                     | 12,000,000 |
| The remainder to move August 1 to close of navigation, 1917, is.....                                       | 17,000,000 |
| Period remaining embraces 16 weeks, requiring shipment at a weekly rate of ..                              | 1,062,000  |
| Coal now moving at a weekly rate of..                                                                      | 940,000    |
| The estimated weekly increase via the port of Toledo, based upon increased transportation efficiency ..... | 2,000,000  |
| Based on present operation this gives a weekly tonnage of .....                                            | 1,140,000  |
| Total for sixteen weeks .....                                                                              | 18,100,000 |

The foregoing represents a performance that can be made only under favorable seasonable conditions, or weather conditions, on the Great Lakes. In the event seasonable conditions compare with the average of the past twenty-five years the experience gained by the vessel owners determine that 50 per cent of this tonnage should be delivered with the close of the month of July; that the remaining 50 per cent should move as follows:

|                                      |                 |
|--------------------------------------|-----------------|
| August . . . . . 35 per cent.....    | 5,950,000 tons  |
| September . . . . . 30 per cent..... | 5,100,000 tons  |
| October . . . . . 20 per cent.....   | 3,400,000 tons  |
| November . . . . . 15 per cent.....  | 2,550,000 tons  |
| Total.....                           | 17,000,000 tons |

The spread of the remaining 50 per cent, however, will be altered by the fact that the Lake Erie Bituminous Coal Exchange has now perfected an arrangement with the vessel owners of all of the fleets navigating the Great Lakes, to the effect that an adequate supply will be supplied by the vessel owners at all Lake Erie ports as rapidly as cargoes of bituminous coal have been completed, under which conditions a substantial increase can reasonably be expected during the months of September, October and November, which, in effect, will represent an increase on approximately 3,000,000 tons over the same period 1916, provided coal is available to be moved.

Further discussion of the subject developed that the situation at the Lake Erie front is that the ports west of Cleveland are up to full normal operating capacity, and ports Cleveland and east to Erie, Pa., inclusive, are subnormal due to shortage of shipments from western Pennsylvania, Fairmont, Cambridge, and Ohio No. 8 Districts.

In order to bring a volume of lake coal to a tonnage adequate to Lake necessities, it is necessary to increase shipments from the above mentioned districts which, in the judgment of this meeting, can only be accomplished by observing the action proposed in Resolution adopted at a meeting held at Cleveland, Ohio, on August 1, between the Lake coal and iron ore shippers, representatives of the Northwestern dock interests, and railroads serving Lake Erie ports, arrived at after a thorough consideration of this question.

The resolution is as follows:

"That it is the sense of this meeting that in view of the fact that the measures taken by the War Board in the efforts to increase coal shipments to the northwest have proven ineffective, because of the con-

ditions recited above, that unless preemptory orders be issued from some authoritative source to all coal operators in the Pittsburgh District, the Fairmont District, and the No. 7 Ohio District, that they must ship 50 per cent of the cars (excepting cars for railroad fuel), furnished to their mines daily, to Lake Erie Ports for trans-shipment to the northwest until further notice, or until the present emergency is met, the situation in the northwest next winter will amount to a calamity."

This was confirmed by the meeting and recommended to the consideration of the coal and railroad governmental authorities, soliciting immediate action, if justifiable means can be found to make such action possible.

It was also resolved that to obtain the desired increase in the movement of coal to Lake Erie ports, that the same method of car distribution to all mines in all districts be observed, as is now being applied to railroad fuel coal.

Those present at the conference were F. S. Peabody, chairman, Committee on Coal Production; F. C. Baird, commissioner, Lake Bituminous Coal Exchange; G. L. Peck, chairman, Lake Coal and Ore Committee; Daniel Willard, chairman Advisory Committee, Council of National Defense; E. H. DeGroot, Jr., H. C. Barlow and A. G. Gutheim, Interstate Commerce Commission, Division of Car Service; C. M. Sheaffer, chairman, Commission on Car Service; William Collins, M. A. Hanna & Co., Cleveland; C. D. Caldwell, By-Products Coke Corporation, Chicago; George D. Cameron, chairman Executive Committee, Lake Coal Shippers, Cleveland; Wallace B. Donhan, vice-chairman, New England Coal Company, Boston; W. H. Groverman, secretary, Northwestern Coal Dock Operators' Association, Minneapolis; Arthur Hale, vice-president, Consolidated Coal Company, Baltimore; D. R. Lawson, secretary, Central West Virginia Coal Operators' Association, Fairmont; Harold F. Lane, Railway Age Gazette; J. D. A. Morrow, commissioner, Pittsburgh Coal Producers' Association, Pittsburgh; Peter Reiss, president, C. Reiss Coal Company, Sheboygan, Wis.; F. X. Patterson, Federal Trade Commission, Washington; W. J. Tomkins, traffic commissioner, Independent Salt Association, Chicago; Edward A. Uhrig, president, Milwaukee Western Fuel Company, Milwaukee; Charles D. Weeks, Milwaukee Coke and Gas Company, Milwaukee; R. S. McVeigh, vice-president, Island Creek Coal Company, Cincinnati; J. P. Yoder, Federal Trade Commission, and J. B. Zerhl, secretary, Pittsburgh Vein Operators' Association, Cleveland.

Owing to the limited season in which the Lakes are open to navigation, Mr. Peabody was anxious that this situation be handled first. With the tidewater coal exchange in operation, the New England problem presents less difficulties. Not only is it possible to continue coal shipments to New England in the winter, but the efforts both by rail and water are making promising headway toward relieving the situation.

In order to acquaint the President with their specific knowledge of the coal situation affecting the Northwest, Francis S. Peabody, the chairman of the committee on coal pro-

duction; John P. White, president, and William Green, secretary, of the United Mine Workers of America, conferred on August 17 with Mr. Wilson at the White House. Each was able to acquaint the President with many angles of the situation which had not been called to his notice previously. The granting of the priority order, which later was issued, was urged.

Some of the conclusions reached the middle of August by the railroads are expressed as follows by Fairfax Harrison, chairman of their War Board:

"Realizing that the question of providing an adequate fuel supply for the Northwest is one of national importance, involving the defense and security of the nation, because unless the fuel can be placed there prior to the close of navigation there will be a reduction next year in the food supply produced in that section and in the amount of iron ore shipped down the Lakes, and also much suffering among the people of Minnesota, Wisconsin and the Dakotas this winter, this committee has been untiring in its efforts to improve the situation.

"Although the cooperative efforts of the coal men, the Lake vessel owners and the railroads have, as already shown, increased 28.2 per cent the total movement of coal in the United States, this committee has been unable to direct that movement to the Northwest to the extent that is necessary.

"The committee desires to call attention to the fact that some of the extraordinary powers that have recently been vested in the Federal Government may enable the administration to apply a remedy which may result in getting the necessary coal to the Northwest prior to the close of navigation.

"In spite of the cooperative efforts of all, the amount of coal going via the Lake Erie ports to the Upper Lake ports is not enough, and the general situation today is as follows:

"Loaded into boats at Lake Erie ports:

|                                          |                 |
|------------------------------------------|-----------------|
| "To August 11.....                       | 11,890,000 tons |
| "Needed by the close of navigation ..... | 29,000,000 tons |

|                                       |                 |
|---------------------------------------|-----------------|
| "Balance to be loaded and moved ..... | 17,110,000 tons |
|---------------------------------------|-----------------|

"in the sixteen remaining weeks when Lake navigation is normally open.

"The amount of coal loaded into boats at Lake Erie ports, January 1 to August 12, is as follows:

| 1917.      | 1916.      | Decrease.      |
|------------|------------|----------------|
| 11,890,000 | 14,397,000 | 2,507,000 tons |

"Part of this decrease is due to the fact that navigation on the Lakes began three weeks later this year than in 1916, meaning a smaller movement in 1917 by 925,789 tons, based on 1916 figures. Part of the decrease also is because of less coal having sought markets via the Lake ports.

"For the purpose of expediting the move-

ment of coal via the Lakes, the 'Lake Erie Bituminous Coal Exchange' was formed, to take effect June 1, and this organization has been most helpful in expediting the movement.

"Numerous and almost continuous meetings have been held by all parties interested—the railroads, the coal producers, the dockmen, the vessel-men, and others—for the purpose of increasing the volume moving to and via the Lake ports.

"Due to a variety of causes, the total shipments of coal from these Lake Erie ports have not gone to the head of Lake Superior to the extent necessary, and this makes it doubly important to grant relief at once, as the fuel for domestic consumption in the great Northwest is largely supplied through Duluth and contiguous ports. It will be most difficult, if not impossible, to obtain relief during the winter months by rail shipments, because of the distance from the mines and weather conditions.

"The movement of iron ore is dependent in part upon the movement of Lake coal."

#### RUSSIAN SCIENTIFIC COMMISSION TO STUDY MINING PROBLEMS HERE

A Russian scientific commission is studying mining and metallurgical problems in the United States. It consists of:

Theodore Foss, Mining Engineer and Director of several mining works of the Ural Mountains; Ivan Goubkin, Mining Engineer and member of the Russian Geological Committee; Avenir Snietkoff, member of the Russian Geological Committee; Alexander Stepanoff, Secretary.

The Russian Ambassador describes the object of the commission's visit as follows:

"The purpose of the commission is to investigate conditions of the mining industry in the United States so as to utilize the knowledge for development of Russia's natural resources; to inspect the most important industrial works; obtain information of mining legislation, and government work in research and in administration of the field of geology and mining; to acquaint the representative government institutions of the United States as well as the people with the natural resources of Russia, their present developments and future possibilities."

#### Potash Bill Passes Senate

After considerable discussion the Senate, without serious opposition, passed Senator Pittman's bill authorizing exploration for and disposition of potassium. This bill follows the lines of the oil land leasing bill. It formerly was included in that measure but as serious opposition had developed as to the other minerals which did not apply to potash, Senator Pittman introduced a separate bill which would extend the power granted in the bill to cover the potash situation alone.



### WISCONSIN'S GEOLOGIST HELPS UNCLE SAM ON WAR WORK



*Photo by Harris & Ewing*

W. O. HOTCHKISS

Member War Minerals Committee

W. O. Hotchkiss, the state geologist of Wisconsin, who is spending much of his time in Washington at present, cooperating with the Government in its war research work, was born in Eau Claire, Wis. He attended the public schools at that place, and in 1903 was graduated from the State University as an engineer. For two years he did economic geological and mining engineering work in private employ. He then joined the faculty of the University of Wisconsin, and for three years was instructor in geology. He left this position to become state geologist and to serve on the state highway commission.

In the course of his work Mr. Hotchkiss has made careful studies of the geology of sections of the Lake Superior iron region, and in addition has done geological work in the cobalt district of Canada.

O. P. Hood, the chief mechanical engineer of the Bureau of Mines, has been placed in general charge of the station at Pittsburgh. Lawsum Stone has been made superintendent of the Pittsburgh station.

### IMPORTS OF LEAD SHOW DECIDED INCREASE

**Geological Survey Statement Shows that 268,952 Tons of Heavy Metal Were Consumed During First Half of Year.**

The United States Geological Survey, Department of the Interior, has undertaken a midyear canvass of lead production, the results of which have just been tabulated by C. E. Siebenthal. For convenience of comparison half the corresponding quantities for the 12 months of 1916 are inclosed in brackets. The output of domestic desilverized lead, excluding desilvered soft lead for the first six months of 1917, was 152,231 short tons (158,235), the output of domestic soft lead, including desilverized soft lead, was 124,292 tons (117,879) and the output of lead produced from foreign ores and bullion was 29,539 tons (9,453).

In view of the scarcity of lead, the increase in lead of foreign origin is very encouraging. The greater part came from Mexico. According to the records of the Bureau of Domestic and Foreign Commerce, the total lead imported in the first six months of 1917 was 30,620 tons (17,665) of which 22,507 tons came from Mexico (12,099), and 4,569 tons came from Canada (3,153). The exports of domestic lead amounted to 29,241 tons (50,283) and of foreign lead 6,066 tons (4,940). The lead used in articles exported with benefit of drawback was 3,270 tons (2,585). Thus the total exports of lead were 38,577 tons (57,808). Disregarding stocks, the apparent consumption of lead in this country in the six months was 268,952 tons (230,587).

The production of new antimonial lead was 7,822 tons (12,019), and of secondary antimonial lead 1,959 tons (2,065). The output of secondary pig lead by regular ore smelters was 7,578 tons (5,548).

The average outside spot price of lead during the six months period was 9.9 cents a pound, as against 6.9 cents in 1916.

### MILLION-DOLLAR LABORATORIES TURNED OVER TO BUREAU OF MINES

The new million-dollar laboratories of the Bureau of Mines, located in Pittsburgh, are practically completed, and have been formally turned over to Van H. Manning, Director of the Bureau of Mines. It was the intention upon the completion of these buildings to dedicate them with a great meeting of the representatives of the mining and chemical industries, but the war caused a postponement of the plans. The buildings will constitute the principal experiment station of the bureau, and will be used for carrying on the investigations into mining methods and the use of fuels.



## BOSTON RETAILERS SCORED IN GOVERNMENT REPORT

**Federal Trade Commission Finds that They Did Not Hesitate to Take Advantage of Necessities of the Public to Boost Their Margins.**

Reports are being made by the Federal Trade Commission on the retail coal situation in a number of cities. The following report on the situation in Boston is typical of others which are appearing:

In making its investigation into the retail situation in Boston, the Federal Trade Commission collected from fifty-one retailers of anthracite information as to the amount of coal received, the prices paid to the producer or wholesaler, as the case might be, the prices at which the coal was resold to the consumer and the margins obtained (the margin being the difference between the cost price to the retailer and the sales price to the consumer). The investigation was conducted by Messrs. Gordon and Wright, agents of the Commission.

### RECEIPTS OF ANTHRACITE

The fifty-one retailers from whom data were obtained received during the first five months of 1917, 652,017 net tons of anthracite. During the corresponding months of 1916 they had received 778,387 net tons. The receipts in 1917 were thus only 83.8 per cent of the receipts in 1916. The existence of this shortage in the face of an increased output of anthracite (the commercial production of anthracite was nearly three million tons larger in the first five months of 1917 than in the corresponding period in 1916) shows clearly the situation in Boston, and, it may be added, in New England, also. It is obvious that the needs of Boston have not been taken care of.

This loss in tonnage was by no means uniformly distributed among the retailers. In fact sixteen retailers received more coal during January to May, 1917, than during January to May, 1916, their increased receipts totaling 44,418 tons. Of this amount over half (26,023 tons) went to one dealer. On the other hand, thirty-five retailers showed decreased coal receipts during January-May, 1917, these decreases totalling 170,788 tons. In a number of cases the percentage of decline in the amount of coal received by retailers was quite large. Several retailers failed to receive even half as much coal during the first five months of 1917 as they had received during the first five months of 1916; and one retailer received only about one-sixth of his normal tonnage.

No favored treatment appears to have been shown the largest companies as a class. However, one of the leading companies was favored to an unusual degree. In the face of a marked shortage, it received 26,023 more

tons than during the corresponding period of 1916. This increased tonnage represented an eighty-seven per cent increase in its receipts of anthracite.

### RETAIL PRICES

The household prices of egg, stove and chestnut coal were almost uniformly maintained in Boston during April and May, 1917, at \$9.50 per net ton, and the household price of pea coal was almost uniformly maintained at \$8.50. On industrial sales of anthracite the retailers received varying prices, but most of them charged during April and May either \$9.25 or \$9.50 for egg, stove and chestnut, and either \$8.25 or \$8.50 for pea. Generally speaking, the larger retailers charged the lower price, and the smaller retailers the higher price, but this was by no means universally the case.

The large retailers (those who bought 10,000 tons or more during January to May, 1916) obtained their coal on more favorable terms than the small retailers. On egg coal the large retailers on the average paid 36 cents less per ton in April than the small retailers, and 17 cents in May; on stove coal they paid 39 cents less in April, and 35 cents less in May; and on chestnut coal they paid 49 cents less in April and 48 cents less in May.

### MARGINS OBTAINED

The margin, as already stated, is the difference between the cost price to the retailer and the sales price to the consumer. The typical household price of egg, stove and chestnut coal in both April and May was \$9.50 per ton. (One or two retailers in both of these months charged as much as \$10.00 per ton, but \$9.50 was almost the universal price.) By combining these figures, that is, subtracting the cost figures from \$9.50, we obtain the average margins.

The average margin on egg coal obtained by all the retailers reporting was \$2.85 in April and \$2.75 in May; on stove coal it was \$2.69 in April and \$2.63 in May; and on chestnut coal it was \$2.65 in April and \$2.56 in May. Since \$2.00 a ton was ordinarily an ample margin, it is clear that the retailers on the whole received very large margins, and particularly is this true of the large retailers, who during April-May received margins averaging \$2.92 per ton.

Individual retailers, of course, obtained margins far exceeding the average. On egg coal, for example, there were five large retailers and three small retailers who in April obtained margins exceeding \$3.50 per ton; and there were four large retailers and three small retailers who obtained these margins in May. Indeed one large retailer (the same concern that increased its coal receipts during January-May, 1917, by eighty-seven per cent, in the face of a considerable shortage) obtained margins of \$4.10 and \$4.42 on egg coal in April and May, respectively; of \$3.91 and \$4.05 on stove coal in April and May;



and of \$3.94 and \$3.85 on chestnut in April and May.

In conclusion, it may be said that the coal retailers of Boston, with a few notable exceptions, did not hesitate during the period under discussion to take advantage of the necessities of the public, and to charge for anthracite a price that netted then unreasonable margins.

## **CERAMIC INDUSTRY GETS AN EXPERIMENT STATION**

**Lack of Technical Knowledge Has Greatly  
Hampered Progress of Clay Working—Much  
Capital Invested.**

The establishment of a mining experiment station at Columbus, Ohio, under the jurisdiction of the Bureau of Mines, to represent the ceramic industry of the United States, has been authorized. Columbus was selected as the site for the station because it is the capital of the state, recognized as the center of the clay working and allied industries, and also because the bureau can work in co-operation with the School of Ceramics at Ohio State University, and also gain the expert advice of Prof. Edward Orton and Prof. Arthur S. Watts, noted authorities of the subject of ceramics, who are connected with that school.

Director Van H. Manning, of the Bureau of Mines, in recommending that the subject of ceramics be taken up at this station, said: "No industry in this country offers more opportunity for constructive effort and new development than does the ceramic industry. Moreover, the clay working and allied industries represent one-third of all capital invested in crude mineral industries, and are, therefore, entitled to the same consideration as other industries now under study by the Government. However, the industry is unprogressive, largely on account of technical knowledge. The European research, upon which the progress of the industry has largely depended, is not now available. Moreover, this information is not always applicable to American processes and materials. In the clay working industries, as in many other mineral industries, the utilization of low-grade materials is now imperative in order to prevent exhaustion of those high-grade materials which, if exhausted, would leave us at the mercy of foreign countries.

"In the ceramic industry the fuel consumed represents approximately 20 per cent of the value of the wares produced, and as a rule a great deal of this fuel is unnecessarily wasted. Hence the value of the fuel wasted is very large, and the lessening of this waste demands immediate study. Moreover, the manufacturing wastes, due to faulty methods or practice, is very great, and at the present time there is no means of subsequently recovering this waste. It is believed that enormous

savings can be effected in the clay working industry, but the subject has never been adequately studied, because the necessary outlay has been considered too great for individual firms to make.

"Moreover, manufacturing processes which now endanger the lives and health of employes should be investigated promptly. Investigations upon a laboratory scale have proven inadequate for the preparation of process specifications such as the industries demand before they will adopt less wasteful methods."

## **CAR SITUATION SHOWS A MARKED IMPROVEMENT**

The excess of unfilled car requisitions over idle cars, or what is ordinarily but inaccurately termed car shortage, was only one-fourth as great on August 1, 1917, as on May 1, 1917.

The excess of unfilled car requisitions on May 1 was 148,627; on June 1 it was 106,649; on July 1 it was 77,682, and on August 1 it had been reduced to 33,776.

This result has been accomplished at a time when the railroads are supplying from 15 to 20 per cent more freight service with the same number of cars than was being given this time last year, for the railroads handled in July a tremendous increase in both government and commercial traffic.

The movement of cantonment supplies alone occupied the full services of more than 30,000 cars. There was also an extraordinarily heavy demand for cars to transport food products, as well as materials to and from munition factories.

The result above achieved has been accomplished by cooperation with the railroads of shippers, regulating bodies, and the public generally. This cooperation has made possible the intensive loading of freight cars, prompter unloading, the elimination of a large amount of unnecessary passenger train service, and an opportunity generally to utilize the railroad plant efficiently.

The aim of the railroads at the present time is to put each car to the greatest possible use, to have empty cars placed where they are most needed, to prevent overlapping and unnecessary service; in other words, to make the entire railroad system of the United States the most effective possible transportation agency in winning this war.

### **Anthracite Committee**

A committee of anthracite operators, which may be termed the "War Board" of that industry is constituted as follows:

S. V. Warriner, Chairman, 437 Chestnut Street, Philadelphia; W. H. Williams, I. B. Dixon, S. T. Peters, W. H. Truesdale, C. F. Huber, E. E. Loomis, W. J. Richards, P. C. Madeiro, John Markle, Jackson E. Reynolds and E. W. Parker, Secretary.

**MINING CONGRESS MEMBER  
WHO IS DOING BIG THINGS**



*Photo by Harris & Ewing*

**FLETCHER HAMILTON**  
California's Mineralogist

As chief executive of the California State Mining Bureau, State Mineralogist Fletcher Hamilton occupies a highly important position in the mining industry, not only of California, but of the nation.

California is isolated to a certain extent from the Industrial centers of the East on account of the long railroad haul and high freight rates, but this adverse condition is of vital importance in but few instances. Practically every mineral substance required in war, as well as in peace times, is either produced, or is possible of commercial development in that state, and many valuable materials located there are found in no other section of the country.

Realizing the fact that a complete and detailed knowledge of these developed and undeveloped mineral resources will without doubt materially aid in the successful completion of the war in which the United States is now engaged, Mr. Hamilton has assigned his staff of trained assistants to the work of making field investigations and the bringing up-to-date of information already on record, relative to "war minerals" in particular. Thus

the buyer, the producer, and the government itself will find available for immediate use, definite facts which may at any time be required for the advancement of the country's welfare, all without cost and without loss of time. The energy and foresight thus exemplified are but characteristic of the man, who is eminently fitted to direct the work of the Mining Bureau which has a record of thirty-seven years of achievement behind it, in which the interests of the mining public have at all times been most efficiently served.

Fletcher Hamilton was born at San Francisco in 1882, was educated in the public schools of that city, and graduated from the University of California in 1904, as mining engineer. After graduation he worked one year as engineer at the mines of the Kimberly-Montana Mining Company, Montana, then returned to California as engineer and assistant manager of the Dairy Farm Mine in Placer Company. After serving in this capacity for two years he became interested in a mining property in Mexico, the development of which he directed until July, 1909. At that time he returned to California, and operated a placer mine for several years in addition to which he carried on a consulting practice, examining mines in California, Nevada, and Mexico. This work was given up after receiving his appointment as State Mineralogist, January, 1913.

Mr. Hamilton is an active member of the American Mining Congress.

## **POMERENE ASKS FEDERAL CONTROL OF STEEL TRADE**

### **Would Regulate Iron Mining and Steel Manufacture After Manner Prescribed for Coal.**

That Senator Pomerene of Ohio is not content to limit his ideas of Government control to the coal situation is indicated by a bill introduced by him which provides for regulating the production, sale, and distribution of iron ore, iron, steel, and their products. The bill is drawn in practically the same form as his amendment which became the fuel section of the food control act. The bill was referred to the Committee on Interstate Commerce, of which Senator Newlands of Nevada is the chairman. Senator Newlands, in discussing the matter on August 20, intimated that the immediate consideration of the bill is improbable.

Charles P. White, who has been commissioner of the Pittsburgh Vein Operators' Association, has resigned to become general manager of the new Clarkson Coal Mining Company, of Cleveland, with offices in the Rockefeller Building.



### GOVERNMENT SPECIALISTS WELL KNOWN TO MINING MEN

A. G. White, mine economist for the Bureau of Mines, was born in Brandon, Wis. His early education was obtained in the public schools of that place. He attended high school at Waupaca, Wis., after which he attended Lawrence College, at Appleton, from which institution he was graduated in 1907 with a degree of B. A. He then taught science for one year at the law school at Sparta, Wis., after which he proceeded to the University of Wisconsin, where he completed the course in economics and received an A. M. degree. Upon finishing his work in the University of Wisconsin, he entered the University of Pennsylvania, where he spent four years doing graduate work. During the same time he served as a member of the faculty of Wharton School of Finance and Commerce, an affiliated institution.

On completing his graduate work in 1913 Mr. White came with the Bureau of Mines as its economist. His early assignments were to field work in the anthracite and bituminous regions of Pennsylvania. He also did work in the oil fields of Oklahoma, Texas, and California. Since becoming a member of the bureau his work has been chiefly with fuel problems. He made a study of the domestic fuel situation at Salt Lake City. His work with the bureau, however, has included a study of its organization and relation of its work to other activities with the idea of preventing duplication and specifying means for helpful coordination. He made a study of the competitive fuel and power situation in the West which deals with the relationship of coal, oil, and electric power.

At present Mr. White is engaged importantly in the war work which is being done by the Bureau of Mines. He is secretary of the war minerals committee, which represents the Bureau of Mines, the United States Geological Survey, the State Geological Surveys, and the American Institute of Mining Engineers.

A photograph of Mr. White was published in the last issue of the Journal.

### FEDERAL TRADE COMMISSION PROBES RETAIL COAL PRICES

After an investigation of the retail coal situation in Washington, which stirred up a cyclonic protest, the Federal Trade Commission reached some interesting conclusions. As such investigations will be undertaken in other cities, there is general interest in the conclusions reached. Some of them are as follows:

"The retail prices for anthracite of Washington dealers for May, 1917, varied widely between the large and small dealers, the highest prices being charged by the larger dealers

who have their own storage facilities, and the lowest prices being charged by the smaller dealers.

"There were wide variations between the margins of different dealers. (By margins is meant the difference between the cost per ton to the retailer and the price charged the consumer.) The largest margins were realized by the larger dealers. These higher margins were partially due to lower cost per ton of coal to the dealer, but mainly to the higher prices charged.

"The larger dealers have been receiving margins from \$1 to \$2 per ton greater than those of the smaller dealers, who do not have storage facilities. Such a difference is an exorbitant charge for the service of purchasing and storing coal. This function is provided for the smaller dealer by the wholesaler, whose margin, including a profit, in no case exceeded 50 cents per ton in the month of May.

"It would be impossible for all dealers to reduce their margins to the level of the lowest margins for they evidently do not cover the cost of handling the coal, but the Federal Trade Commission regards such margins as \$2.75 to \$2.90 per ton, which were realized on each ton of egg, stove and nut coal handled by one dealer in the month of May, as exorbitant and wholly unjustified.

"This dealer estimates his costs of doing business at \$1.50 per ton. The above margins, therefore, yielded net profits of from \$1.25 to \$1.35 per ton for the month of May. Such margins and profits are all out of proportion to the service rendered the public, and should be promptly reduced to a figure that will yield a moderate and reasonable return.

"In New York City the dealers who are the controlling factors of the market regarded 25 cents per ton as a fair and reasonable return in the past, while an additional 10 cents per ton is regarded as sufficient to compensate for the additional difficulties of management at the present time."

### OVER 35,000 RETORTS AT ZINC SMELTERS ARE IDLE

The United States Geological Survey, from returns representing 99 per cent of the output, estimates that the production of spelter during the first six months of 1917 was 364,000 short tons, as compared with 351,000 short tons during the last half of 1916. Stocks on hand are estimated at 33,000 tons, as compared with 17,600 at the beginning of the year. A large number of retorts, about 35,000, including 14 complete plants, were reported idle June 30, in addition to the retorts engaged in refining prime western metal and in redistilling zinc ashes. The complete report will be ready for publication in about two weeks.

## CURRENT FEDERAL LEGISLATION

Eight thousand, six hundred and fifty-eight bills have been introduced during the present session of Congress of which 2820 are Senate bills and 5838 are House bills. Chief interest since our last report has been centered in the Lever food conservation bill referred to elsewhere. Of bills more or less directly of interest to mining men are the following:

S. 1816 by Senator Robinson providing for the enlargement of the Interstate Commerce Commission so as to consist of nine members with terms of seven years and salary of \$10,000 has been passed by the House and Senate and signed by the President.

S. 2156 by Senator Pittman, providing for exploration for and disposition of potash lands was passed by the Senate with a special provision that potash deposits in the public lands in San Bernardino county, California, may be operated by the United States or may be leased by the United States upon satisfactory terms. The bill also provides that any leases granted shall provide that the price at which the product is sold shall be reasonable and that the President may require the use of the product wholly within the United States. This bill is now held by the Speaker of the House of Representatives but will be referred to the House Public Lands Committee.

S. 2736, by Senator Cummins, provides for a bureau of publicity in the Department of Commerce, to have charge of all advertising of the Federal Government; to secure greater publicity for information intended for the general public and coming from the various departments of the Government, and to co-operate with organized advertising interests of the nation in promoting and securing legislation to compel adherence to the honesty and reliability of all firms and individuals of the nation. Referred to the Committee on Commerce.

S. 2756, by Senator Pomerene, provides for the regulation of the production, sale and distribution of iron ore, iron, steel and their products. Referred to the Committee on Interstate Commerce.

S. 2783, by Senator Overman, provides that defendants in civil suits or proceedings now or hereafter pending who are actively engaged in the military service of the United States shall be granted a temporary stay of any action, not to extend beyond three months after termination of service nor beyond six months after the culmination of the war.

S. 2812, introduced by Senator Myers (for Mr. Walsh), provides for the sale of coal lands by the Government at a minimum price of \$10 per acre for lands more than 15 miles away from a completed railroad and \$20 per acre within such limit, the Secretary of the

Interior being authorized to offer such lands to competitive bidders, with the right to reject any and all bids. The bill further provides for the leasing of coal lands through competitive bidding or such other methods as the Secretary of the Interior may adopt in tracts of 40 acres or multiples thereof not to exceed 2,560 acres in any one tract, that for the privilege of mining coal under such lease a royalty shall be paid of not less than 2 cents per ton and annual rental of 25 cents an acre for the first year, 50 cents for the second and third years, and \$1 per acre thereafter, such rental to be credited against the royalties accruing for such year. The bill further provides for a lease upon 10 acres to any one person or association without royalty for domestic purposes. The bill provides for the leasing of phosphate lands at a rental of \$1 per acre for the lands, together with such royalty as may be stated in the lease. The bill further provides for the granting of permits to prospect for oil upon 640 acres within 20 miles of any producing oil and gas well, and 2,560 acres more than 20 miles from any producing oil or gas well, the prospecting permit to be for two years, with a requirement that a well 500 feet deep shall be sunk within one year, and that within two years wells aggregating 2,000 feet shall be drilled. The permittee is entitled to a patent upon one-fourth of the land, including in his prospecting permit in case he shall discover oil or gas. Leases are to be for a period of ten years, and call for a royalty of 25 per cent of the gross value secured from the lands embraced within permit until the permittee shall have made application for patent. The permittee is also given the right to ask for lease upon the remaining lands included in his permit. The rights of claimants who have been in contest with the Federal Government are covered by Sections 16 and 17, as follows:

Sec. 16. That upon relinquishment to the United States within ninety days from the date of this act or within ninety days after final denial or withdrawal of application for patent, of any claim or subdivision thereof asserted under the mining laws prior to July third, nineteen hundred and ten, to any unpatented oil or gas lands included in any order of withdrawal or within naval petroleum reserve numbered two, the claimant or his successor in interest shall be entitled to a lease for each asserted mineral location of one hundred and sixty acres or less or any subdivision thereof upon which such claim is based and upon which said claimant, his predecessors in interest, or



those claiming through or under him, have, prior to the date of this act, drilled one or more producing oil or gas wells, such lease to be upon a royalty of one-eighth of the production of oil or gas produced and saved therefrom after first deducting from the gross production such oil or gas as may be used in development and operating such land, and otherwise on the same terms and conditions as other oil and gas leases granted under the provisions of this act: Provided, however, That no claimant who has been guilty of fraud in the location of any oil claim or gas bearing lands shall be entitled to any of the benefits of this section, nor shall his assignee be entitled thereto unless he affirmatively shows that prior to the passage of this act he purchased such lands in good faith, for a valuable consideration and without actual knowledge of such fraud: Provided, further, That upon the issuance of said lease and prior to the delivery thereof the applicant therefore shall pay to the United States for one-eighth of the oil or gas produced and saved from the lands included in said claim at the current field price at the time of production, which shall be in full satisfaction for all oil or gas extracted from said land prior to said lease: Provided, further, That all royalties received under the provisions of this section from said naval petroleum reserve numbered two, whether in oil or money, shall be delivered or credited to the United States Navy: And, provided further, That none of the provisions of this section or of this act shall be applicable to or affect lands or minerals included within the limits of naval petroleum reserve numbered one, in the State of California, or naval petroleum reserve numbered three, in the State of Wyoming: Provided, further, That the provisions of this section shall be applicable in all cases provided for herein, including cases where court actions have been heretofore commenced or may hereafter be commenced by the United States Government affecting the title to such lands or the product thereof.

Section 17 provides that the rights of any person who on the first day of August, 1917, was a bona fide occupant or claimant of oil or gas bearings lands shall not be affected or impaired by this act. The bill provides for the leasing of potassium lands and for prospectors' permits giving exclusive rights to prospect therefor for periods of two years, except upon lands in San Bernardino county, California (which are covered by provisions of S. 2156, above referred to). The bill also provides for expiration permits upon sodium lands and the granting of patent to one-quarter of the land described in permit. These leases are to be for indeterminate periods and under such rules and regulations as may be fixed by the Secretary of the Interior.

H. R. 5668, by Congressman Crosser, provides for the creation of a colonization board

to consist of the Secretaries of the Departments of Labor, of the Interior and of Agriculture, of which the Secretary of Labor shall be chairman. This board is authorized to examine the public domain and reservations owned by the United States and adjoining lands not so owned. It may set apart or withdraw from settlement, location, sale or entry any of the public lands in the United States, including the district of Alaska, and reserve the same as farm-colony reserves, develop plans for developing and colonizing same, and provide for the development and supply of timber, coal, power and other services, and to set aside so much of the timber, coal, water-power sites or other resources owned by the United States as may be necessary to the settlers in such projects. The bill provides for a colonization fund not exceeding in the aggregate \$50,000,000, for the issuance of certificates of indebtedness to the United States in denominations of \$20 or multiples of that sum, payable fifty years after date, drawing interest at 3 per cent per annum, said certificates of indebtedness to be exempt from taxes. The bill provides for an eight-hour day, and that the minimum wage for any class of labor shall not be less than the average in the locality. The bill authorizes the board to make regulations for safety, compensation, sick insurance and an adequate system of sanitation, housing and general living conditions of workers engaged in any operation under the act.

H. R. 5788, by Congressman Kelly of Pennsylvania, provides for the control of the distribution of coal, oil, copper, iron and other metalliferous minerals, timber and water power. The bill authorizes the President to take over and operate such properties, and that no compensation shall be paid for the inherent and site value of any natural resources in the land, nor for other intangible elements. The sum of \$2,500,000 is appropriated for administration expenses, and for the carrying out of the provisions of the act the sum of \$250,000,000 is appropriated. Bill referred to the Committee on Interstate and Foreign Commerce.

H. R. 7595, by Congressman Raker, provides for the relief of Red Cross workers from the assessment work provided for by the existing statutes. This bill is a substitute for H. R. 5428, reported in the August issue.

H. R. 2316, by Mr. Webb, has, with amendments, been favorably reported by the Committee on Judiciary. This bill provides that combinations engaged in foreign trade shall not be subject to the provisions of the Sherman anti-trust law.

H. J. Res. 142, by Congresswoman Rankin, provides for the extension of the powers of the Lever bill, so that the President shall be authorized to take over for use or operation by the Government all metalliferous mines the product of which is a necessary war material in the manufacture of supplies needed in the common defense.

# ILLINOIS LOANS DEWOLF TO THE BUREAU OF MINES



*Photo by Harris & Ewing*

**FRANK W. DEWOLF**

Assistant Director Bureau of Mines

The new assistant director of the Bureau of Mines, Frank W. DeWolf, comes to the work on detail from Governor Frank O. Lowden, of Illinois. Mr. DeWolf is chief of the Illinois Geological Survey and president of the Association of American State Geologists as well as a member of the American Institute of Mining Engineers and other scientific and engineering societies.

With the entrance of the United States into the war, Mr. DeWolf became active in an effort to learn how geologists and mining engineers might be effectively engaged, and he was active in helping to organize the War Minerals Committee which is successfully coordinating the work of the Bureau of Mines, the Geological Survey and of State Surveys and mining engineers in private life.

Mr. DeWolf's present work with the Bureau has special reference to its war activities, and on the administrative side his experience as director of the Illinois Survey for eight years, engaged in geological and mining investigations, has peculiarly fitted him to be a useful assistant to Director Manning. He has been actively interested for years in the

welfare of the Bureau, and has formerly served in a consulting capacity.

Mr. DeWolf was born in Vail, Iowa, in 1881. He is married and has three children at home in Webana, Ill. His early education was secured in the high schools of Des Moines, Iowa, and Chicago, Ill. This was followed by a scientific course at the University of Chicago, where Mr. DeWolf specialized in geology and chemistry and pursued a post-graduate course in geology. Entering the service of the U. S. Geological Survey in 1904, his assignments were to Pennsylvania coal and oil fields. Later, on assignment to Illinois and on joining the Illinois Survey, as assistant director, under Dr. Bain in 1907, his work continued in economic lines including coal, oil, fire clay, cement material and other nonmetallic minerals. His present motto is "Beat the Kaiser."

## SUGGEST USE OF ZINC

### PIGMENTS FOR THOSE OF LEAD

That the country faces a shortage of lead and a surplus of zinc, with a resulting lead price far above the average and a zinc price reported as below cost, is the situation which has called forth the following expression of opinion from one in close touch with each of the industries:

Owing to the decline in lead imports from Mexico in recent years, the great burden of supplying the war demand for lead has fallen upon domestic producers. A gain of 25 per cent in domestic mine output of lead was made in 1914, and one of 10 per cent in 1916, but the prevailing high prices indicate that the supply is not yet adequate. The present price of lead is 60 per cent above the average price in 1916. It has been estimated that 25 per cent more lead will be needed in 1917 than was used in 1916. Domestic ore resources to meet this demand are not in sight.

Early in the war zinc rose to a high price, greatly stimulating the output of spelter, which in 1916 was double what it was before the war. The result has been a considerable overconstruction of smelting capacity and latterly some overproduction of spelter, the stock on hand June 30, 1917, being about 33,000 tons, as compared with 17,598 tons at the close of 1916. The present price of spelter is 8.5 cents a pound, as against an average of 13.4 cents in 1916 and 12.4 cents in 1915. The smelters claim that 8.5 cents is less than it costs to make spelter at present ore, fuel and labor prices. They are corroborated by the fact that 15 per cent of the retort-smelting capacity (35,000 retorts, including 14 plants) was idle June 30, 1917. The number of idle retorts is no doubt considerably larger at present. On the other hand, "sheet ground" operators in the Joplin district say that the present price of zinc concentrates does not pay the cost of production, and they are closing down. If these mines close entirely, it will cut off the whole supply of zinc concentrates from which sheet zinc is made, as well as lead concentrates containing over 20,000



tons of lead annually. This is more than the whole gain in pig lead production during 1916.

A remedy for the scarcity of pig lead and the surplus of spelter may be found in the substitution of zinc pigments for lead pigments. Lead pigments produced in 1916 contained a total of approximately 175,000 tons of lead. These pigments, however, were not all white pigments for which zinc pigments could be substituted. They comprised red lead, orange mineral, litharge and sublimed blue lead. Nevertheless, white lead pigments alone contained more than 110,000 tons of lead. The substitution of zinc pigments for these lead pigments would relieve the lead stringency, and by making a market for more zinc would absorb some of the plethora of zinc ore. As a war measure, the prohibition of the manufacture of white lead because the lead in pigments is needed in munitions is on the same basis as the prohibition of the manufacture of distilled liquors because the grain is needed for foodstuffs.

It may not be desirable to substitute zinc for lead in toto, however, for in general a mixture of lead and zinc pigments with some inert base is found preferable for most purposes. Though classed with the zinc pigments, leaded-zinc oxide may contain as much as 25 per cent of lead. The output of this pigment is rapidly increasing. A recent trend in zinc smelting practice by extension would lend itself admirably in this connection. At a number of smelters the retort residues, containing from 3 to 7 per cent of zinc, are being burned on Wetherill grates and the zinc oxide collected in baghouses. Owing to impurities in the residues and to excess of carbon, it is difficult to obtain a merchantable zinc pigment. But a portion of the product is merchantable, another portion can be made so by reburning in a muffle furnace, and nonmerchantable oxide can be used in making lithopone. The small quantity of oxide recovered, however, because of the low zinc content of the residue, makes profitable operation doubtful. Spelter is usually made in three "draws;" the first and second draws are best in quality, for the last draw contains more lead and iron because a higher temperature is maintained in order to drive off the last of the recoverable zinc. The last draw, therefore, is expensive and poor in quality. It has been proposed to omit the last draw and carry the second draw a little further, thus leaving enough zinc in the residues to make the recovery of zinc oxide profitable. This system of operation would reduce the surplus of spelter production and would increase the zinc oxide production. It would seem feasible to smelt zinc concentrates containing considerable lead in this way, avoiding lead in the spelter by taking only two draws and recovering the lead in leaded-zinc oxide. This would tend to the conservation of zinc, because it would prevent the loss of zinc which results from making the clean zinc concentrate at present demanded by zinc smelters.

## OPERATORS' ASSOCIATION SELECTS ITS DIRECTORS

### Plans Delayed by Confusion Attending President's Price-Fixing Decree

Completion of the plans of the National Association of Coal Operators, which was to have been accomplished at a meeting called in Washington the middle of August, was not undertaken at the meeting, due to the changed conditions which were brought about by the President's price-fixing activities and the appointment of a fuel dictator. Other than naming a board of directors, practically the entire time of those who gathered for the meeting of the National Association of Coal Operators was taken up in rendering assistance to the committee on coal production in the matter of compiling cost data for presentation to the Federal Trade Commission. In this the representatives of the coal operators worked with a number of the auditors of large coal companies, who had been summoned to Washington by Francis S. Peabody for that purpose. Before proceeding with the selection of a secretary and the rental of offices, the National Association decided to call all coal operators in the United States together for a conference, at which the matter of coal costs could be discussed, and incidentally some of the problems concerning the activities of the National Association.

The call for the meeting, which afterwards was postponed, reads as follows:

"In view of the action of the President, with reference to the bituminous coal industry of the country as reported in the morning press, it is deemed of the greatest importance that the coal producers of the United States meet as soon as possible for the purpose of discussing and considering the abnormal conditions under which the industry is now asked to labor.

"Accordingly, the National Association of Coal Operators extends an invitation to all bituminous coal producers of the country to meet at the William Penn Hotel, Pittsburgh, Pa., at 10.00 o'clock, a. m., Wednesday, August 29, 1917.

"Should you desire to communicate with the National Association of Coal Operators prior to this meeting, please address Mr. D. A. Morrow, Secretary, Pittsburgh Coal Producers Association, 323 Farmers Bank Building, Pittsburgh, Pa."

It is expected that this meeting will be held in the near future, but the date has not yet been fixed at this writing.

The board of directors of the National Association is as follows: H. N. Taylor, Kansas City, Mo.; F. C. Honnold, Chicago, Ill.; A. M. Ogle, Terre Haute, Ind.; Geo. H. Barker, Columbus, Ohio; Rembrandt Peale, 1 Broadway, New York City; J. H. Wheel-

wright, Baltimore, Md.; Howell J. Davis, Knoxville, Tenn.; W. K. Field, Pittsburgh, Pa., and J. J. Tierney, Philadelphia, Pa.

The activities of the Association are outlined as follows:

*Publicity.*—It is the belief of this Committee that detailed current information should be collected and distributed from the Secretary's office. The Committee feels that such reports will be of very great value to the coal producers and the general public and will be of direct benefit to the entire country in the present crisis as well as in the future of the industry as a whole.

*Statistics.*—The Committee recommends the adoption of a standardized system for making reports to the National Association, and urges close cooperation between the Association, the Committee on Coal Production of the Council of National Defense, the Federal bureaus and commissions, etc., in the collection of all necessary statistics and reports. It is further recommended that the National Association act as a bureau of information for member associations.

It is believed that one of the functions of the National Association should be the promotion of harmonious feeling among the member associations. It is further believed that all of the recommendations made by the Committee are entirely within the law and in line with the desire for cooperation expressed by the Secretary of the Interior, by the Federal Trade Commission, and the Committee on Coal Production of the Council of National Defense. The carrying into effect of the above purposes means the greater preservation of the life of the men employed in and around the coal mines, and the conservation of the fuel resources of the country.

#### DECLARATION OF PURPOSES

Whereas, cooperative effort on the part of the coal producers in the United States is deemed essential to—

The proper conservation of the coal deposits of the United States by increasing the yield per acre to the maximum;

Cooperation with public officials, both State and National.

The ascertainment and compilation of data directly and indirectly bearing upon the production, transportation, and marketing of coals;

The prompt enforcement of State and Federal laws relating to mines and miners.

The ascertainment and installation of uniform cost-keeping methods and uniform and improved accounting systems;

The ascertainment and lowering of production costs;

The establishment of bureaus to furnish pertinent information to the coal producers, the buyers and users of coal, the officials of Federal and State governments, and to the public generally;

The establishment and maintenance of proper relations between the carriers and the

coal-producing companies, including the ascertainment of facts and the compilation and distribution of data and statistics relating to transportation from the several coal fields to the markets;

The encouragement and fostering of the general welfare of the United States bituminous coal-mining industry; and

Whereas, It shall be thoroughly understood by the members of this Association that no part of the machinery of this Association will be permitted to be used to establish, regulate, maintain or control prices for the sale of coal, to divide territory, to regulate, diminish, or control the production of coal, or limit or control competition; and that no information shall be collected or distributed respecting any prices which any member intends or expects to ask under any circumstances whatsoever.

Therefore, the association and bureaus of coal operators in the United States have formed the National Association of Coal Operators and have adopted the following articles of association and by-laws:

#### ARTICLES OF ASSOCIATION

##### I.

*Title.*—The title of this Association shall be the National Association of Coal Operators. Its headquarters shall be in the city of Washington, D. C.

##### II.

*Membership.*—Section 1. *Eligibility.* The membership of the National Association of Coal Operators shall consist of such State and District Associations and bureaus of coal operators who are actively engaged in the production and distribution of coal as shall apply for membership and qualify therefor under these articles of association and by-laws.

Sec. 2. *Election.* Election to membership shall be a majority vote of the members present at any meeting of the Executive Committee.

Sec. 3. *Termination of Membership.* Any association may terminate its membership in the Association by written notice upon the payment of any assessment due at the date of such notice.

Any member of this Association may be expelled for cause by a two-thirds affirmative vote of the members of the Executive Committee present at any meeting after thirty days written notice shall have been served upon such member and shall have been sent to all the other members.

##### IV.

*Management.*—The management of the Association shall be vested in an Executive Committee, to consist of one person selected by each of the member associations from the officers of the companies composing its membership.

The Executive Committee shall select a president, vice-president, secretary and treas-



urer, and shall appoint such standing committees or special committees as they may find necessary to properly carry out the purposes of the Association. The duties of the above officers shall be such as usually pertain to these positions, and are necessary to carry out the purposes and activities of the Association indicated in the foregoing preamble and declaration of purposes.

The Executive Committee shall also employ a general manager (title to be agreed upon), a counsel and such other employees as may be necessary, define their duties, and fix their salaries. It shall levy such assessments on member associations on a pro rata basis of tonnage represented as may be necessary for the financial support of the National Association. It shall exercise general direction of the management of the Association, and shall make such rules and regulations as are necessary to carry on the work of the Association.

When first elected to the Executive Committee the members shall be divided by lot into four groups as nearly equal in number as possible, whose terms of office shall be three, six, nine, and twelve months, respectively. Upon the expiration of these periods their successors thereafter shall be elected for twelve months.

#### V.

*Meetings.*—Section 1. Executive Committee. Meetings of the Executive Committee shall be held quarterly on the — day of the month. Special meetings may be called by the President or the General Manager when in their opinion such meetings are necessary, and must be called if requested by one-fourth of the Executive Committee.

A quorum for the transaction of business shall consist of not less than one-half the membership of said committee. Any member may designate in writing another person to attend any meeting in his stead and act for him at such meeting.

Sec. 2. *Association.* The Association shall hold a regular annual meeting on the — day of —, at which each member association may be represented by such delegate or delegates as it may select.

*Amendments.* These by-laws may be amended by a majority vote of the Executive Committee at any meeting, provided, however, that such proposed amendment shall have been submitted to the members in writing at least thirty days prior to the holding of such meeting.

We, the undersigned, duly accredited and authorized representatives of associations and bureaus of coal operators in the United States, having read the foregoing Declaration of Purposes and By-laws of the National Association of Coal Operators, do hereby join each with the other in the formation and organization of The National Association of Coal Operators, hereby ratifying and affirm-

ing such Declaration of Purposes and By-Laws.

And as duly accredited and authorized representatives of such associations and bureaus, we do hereby agree that the associations and bureaus which we represent are and shall be severally and respectively bound thereby while members of said associations.

The following resolutions were adopted originally by the operators in the smokeless fields and later have been adopted by practically all coal producers in the country:

*Resolved*, That the Committees of Seven appointed by each State be authorized by this Convention to cooperate with the Committee on Coal Production of the Council of National Defense, for the purpose of furnishing detailed information that the Government asks for in regard to quality of coal, *et cetera*, and to suggest the proper plan for an equitable distribution of any burdens or hardships that may fall upon operator, shipper, or consumer, through the working out of that plan.

*Resolved*, That the operators will advise the Committee on Coal Production of the Council of National Defense as to the quality, quantity, and any other information that may be of value in making the allotments for Government coal.

*Resolved*, That the Committee on Coal Production check and compile these data and advise as to equitable allotment, both of various government grades and of coal to take the place in the market of coal withdrawn for the use of the Government.

*Resolved*, That, reserving all rights of appeal to the Court of Claims, we accept such allotments as may be made by the Cabinet Officers who are members of the Council of National Defense, or such agency or agencies as may be designated by lawful authority, respecting coal for Government use, and necessary adjustments between producers to equitably adjust the burden, and cause shippers not supplying the Government directly to supply their fair proportion of coal to government shippers, to take the place, *pro tanto*, on coal supplied to the Government."

#### RICE AND LIGGETT INSPECT NORTH CAROLINA TIN MINES

An examination of the tin deposits near Lincolnton, N. C., has been made by George S. Rice, chief mining engineer of the Bureau of Mines. He was accompanied on this trip by Thomas H. Liggett, a widely known mining engineer, who contributed his services gratis in response to the request being sent out by the war minerals committee, asking each geologist and engineer in the country to do his bit towards making the country more independent of foreign supplies of minerals.

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## BETTER FIRING METHODS IN NAVY SAVES GREAT WASTE OF FUEL

The battleship now steams 31 per cent farther on a ton of coal than in 1908. This is equivalent to an actual fuel saving of about 24 per cent as an average for all ships. The improvement on some of the ships must have been far in excess of these figures.

The installation of pyrometers and gas analysis apparatus on board all ships has caused the building or improving of fire-room timing devices; has caused a study of combustion and firing problems which has led to a location and elimination of nearly all the air leaks in furnaces and boiler settings, the determination of the proper amount of coal for a charge at various speeds, the correct firing interval, the correct normal opening of damper and furnace and ashpan doors when fires are not being replenished or worked; has demonstrated the saving of fuel possible by manipulating it and ashpan doors when coal is being fired.

On January 1, 1908, the average battleship knots per ton of coal fired was 2.88; on July 1, 1910, this average was 3.77, with ships 20 per cent larger on the latter date than on the former date.

### Issue Crop Report

An example of enterprise is the report on crop conditions recently issued by the American Steel and Wire Company. This report covers all sections of the United States, and is a concise summing up of the situation. The document is of particular value, in that it places in one publication a resumé of general conditions. Most crop reports are issued separately, thereby making it difficult to secure a general survey of prospects.

## GOVERNMENT SPECIALISTS WELL KNOWN TO MINING MEN



*Photo by Harris & Ewing*

PAUL S. BLACK

Law Examiner for Bureau of Mines

Paul S. Black, who has just been appointed law examiner for the Bureau of Mines, is a native of Rome, Georgia. His early education was obtained in the public schools of Rome. Later on he graduated from the University of Georgia and the Georgetown University Law School in Washington. After leaving the Georgetown Law School, he was admitted to the bar in Georgia, and later entered the Government service as law examiner for the General Land Office. For several years he served as attorney in the solicitor's office in the Interior Department, from which he was appointed to the Bureau of Mines.

During his service in the General Land Office, Mr. Black made a specialty of mining law. He organized the public land service in the Philippine Islands, and drafted a code of public land and mining laws which was adopted by the Philippine Commission.

Upon Mr. Black will devolve the determination of many important legal questions now coming before the Bureau, incident to its war work.



## SUBSTITUTE OFFERED FOR ANNUAL ASSESSMENT BILL

### House Committee Changes Bill Passed by Senate and Urges its Passage

When Senator Shafroth's bill suspending, under certain conditions, the annual assessment work on mining claims reached the House Committee on Mines and Mining, after having passed the Senate, it was almost rewritten. The bill as changed by the House Committee reads as follows:

*"Be it enacted, etc.* That the provisions of section numbered twenty-three hundred and twenty-four of the Revised Statutes of the United States, which require that on each claim located after the tenth day of May, eighteen hundred and seventy-two, and until patent has been issued therefor, not less than one hundred dollars' worth of labor shall be performed or improvements made during each year, be suspended for the year eighteen hundred and ninety-four, so that no mining claim which has been regularly located and recorded as required by the local laws and mining regulations shall be subject to forfeiture for non-performance of the annual assessment for the year eighteen hundred and ninety-four: *Provided*, That the claimant or claimants of any mining location, in order to secure the benefits of this act, shall cause to be recorded in the office where the location notice or certificate is filed on or before December thirty-first, eighteen hundred and ninety-four, a notice that he or they in good faith intend to hold and work said claim: *Provided, however*, That the provisions of this act shall not apply to the State of South Dakota.

"SEC. 2. That this act shall take effect from and after its passage."

Secretary Lane, of the Interior Department, expresses his opinion of the bill as follows:

"S. J. Res. 78, as passed by the Senate, proposes to relieve owners of mining locations from performing the annual assessment work required by existing law during the existing war, provided that each such claimant shall spend each year the sum of \$100 in raising, producing, or manufacturing products for the Army, Navy, or people of the United States, or shall perform \$25 worth of labor in any beneficial occupation, or shall pay into the Treasury the sum of \$100.

"I submitted an unfavorable report upon this measure to the chairman of the Committee on Mines and Mining, House of Representatives, July 19, 1917, suggesting that the production of minerals is important, as well as the growing of agricultural crops, and that, in my opinion, the exemption from performance of assessment work should not extend further than to claims owned by officers and enlisted men of the United States Army and Navy, which exemption is provided for by an act recently passed.

"The House committee's substitute for S. J. Res. 78 is substantially to the effect that owners of mining locations shall be relieved from the performance of annual assessment work during the year 1917, upon condition that each claimant shall file in the office of the proper county recorder on or before December 31, 1917, notice of his intention to claim the benefits of the measure.

"Upon further consideration of the matter, I am inclined to favor the resolution as proposed by the House Committee on Mines and Mining. It is more simple and will be easier to administer than would the Senate resolution."

Representative Taylor, of Colorado, who is in charge of the bill in the House, comments on the need of the legislation as follows:

"The committee received a number of urgent requests from various mining sections of the Western States urging Congress to suspend the operation of the annual assessment law during the war, or at least during this year. This appeal came from nearly all portions of the mining regions of the West, and was very urgently asked for throughout Alaska. These requests are based principally upon the grounds:

"First. On account of scarcity of labor, and the actual inability to procure men to do this year's assessment work.

"Second. Because a great many prospectors and miners have enlisted in the Army and Navy, and many others are being drafted.

"Third. Because mining development, especially in the way of prospecting and new discoveries, is practically at a standstill at the present time, and the exceeding high cost of powder, steel, and other materials, makes assessment work almost prohibitive.

"Fourth. Because approximately 90 per cent of all the assessment work done is virtually dead work; that assessment work does not bring about practical development; and during these times it is looked upon as unreasonable and wrong to require any useless, or unproductive expenditure of either labor, money, or materials, and that wasted energy in any direction should not be required in these war times.

"During times of peace annual assessment work on mining claims performs a beneficial service in preventing mining ground from being held for speculative purposes and has the merit of occasionally leading to important mineral discoveries. Annual assessment work also provides labor and a livelihood to a small but deserving class of pioneer people. But it is thoroughly well known throughout the mining sections of the West that to a very large extent annual assessment work is to all practical extents and purposes an economical loss and utter waste of money, labor, and material.

"The general custom for many years throughout many of the mining sections of the West has been to estimate mining work

at \$10 a foot in sinking shafts or driving tunnels, and that the extension of a tunnel of the ordinary size 10 feet or the sinking of a shaft the ordinary size 10 feet is an expenditure of \$100 in assessment work; and when that work is done and that expenditure is made and an affidavit thereof filed that holds the claim for another year. But it is only in rare cases where that small amount of extension work ever actually brings about any useful development or the opening up of a mine."

## **RESCUE WORK AT CLAY, KY., PRAISED BY OPERATOR**

**Says Bureau of Mines and State Mine Inspector Did Splendid Work at Recent Disaster Which Cost Lives of Sixty-Two Men.**

In reply to a request from THE MINING CONGRESS JOURNAL for some facts regarding the recent explosion at Clay, Ky., C. F. Richardson, the vice-president and general manager of the West Kentucky Coal Company, says:

"Inasmuch as the State Mine Inspector has made a thorough investigation of the cause of the explosion at our No. 7 mine at Clay, Ky., as well as the Bureau of Mines, I do not feel that it would be proper for me to even suggest what might have been the cause of this explosion, and I would rather have you get the information officially from either the State Mine Inspector or the Bureau of Mines Department.

"Outside of the first reports in the press, the reports were fairly accurate for I gave out the information daily to the press and gave them the exact information as it came to us from day to day.

"The casualty list is as follows: There were 62 men that lost their lives, eight of this sixty-two died after they had been rescued and were in the hospital; there were 24 men injured, eight of whom died, leaving 16 men now recovering and two of these sixteen were seriously injured, one of whom lost an eye and the eye-sight of one of the other men is considerably impaired, but we have hopes that the eye-sight will be fully restored.

"The relief car of the Bureau of Mines, which was located in Evansville and in charge of Mr. Powell, arrived at the mine at about 12.30 p. m. The explosion took place at 7.30 a. m. We ran a special train to get this car to the mine as quickly as possible, and it gave us substantial assistance in every way, in fact I cannot express the appreciation of the West Kentucky Coal Company for the good work that was done by the relief car. The Bureau of Mines sent Mr. Parker from Pittsburgh to assist and put him in charge of the work while he was on the ground. He remained several days and finally left the work in charge of Mr. Powell. The State Mine Inspector's representatives arrived on the ground the same day of the accident and rendered sub-

stantial aid. Prof. Norwood in charge of the State Mine Inspection Bureau arrived at the mine the following day, getting there as quickly as he could on account of railroad connections, and he remained on the ground several days and also gave us every assistance that we could have possibly expected, and I cannot say too much in behalf of Prof. Norwood and his corps of inspectors, all of whom we are very much indebted to.

"We also had assistance from all of the surrounding mines. I regret that I am unable to give you the names of these men. We were offered assistance and received it from the State of Indiana. It was extremely gratifying to the West Kentucky Coal Company to have such a deep interest taken by everyone in our behalf and in the behalf of the employees of the West Kentucky Coal Company in our time of trouble, and as vice-president and general manager of the company, I never shall forget the acts of kindness that were given us by everyone, and the work that was done in the rescue of the men who were not injured, as well as those that were injured, and also in the recovery of the bodies of those that were killed.

"On account of restoring ventilation it took several days to rebuild the brattices in the mine so that the air could be carried to the face of the different entries where the bodies were found where their lives had been lost. Prof. Norwood and his corps of inspectors remained with us, as well as Mr. Powell of the Bureau of Mines, until this work was completed."

## **WELBORN ISSUES STATEMENT CONCERNING STRIKE SITUATION**

A striking statement has been issued to all employees of the Colorado Fuel and Iron Company by its president, J. F. Welborn. It reads, in full, as follows:

"To All Coal Mine Employees:

"The interests of this company and all of its employees, as well as the interests of the state and nation, have been seriously threatened by a proposed strike by the United Mine Workers of America, and it is important that every employee should fully understand the situation.

"The Industrial Commission of Colorado, on June 29, advised me that notice had been received from James F. Moran, president of District 15, United Mine Workers of America, threatening a strike in all Colorado Fuel and Iron Company coal mines on August 1, 'unless the present grievances can be adjusted before that time.'

"I immediately replied to the commission, offering to adjust any complaints, and urging the commission to secure a list of the grievances referred to by Mr. Moran, as none of them had been submitted to any representative of this company.

"On July 13 I received a letter from Mr.



Moran asking for a personal conference. I immediately invited him to confer with me on the following day, which he did. In this informal conference on July 14 I refused recognition of the union, and made it perfectly clear that this question was not open for discussion. It was agreed that if our employees had any complaints not in the course of adjustment under our industrial representation plan they should be considered at a later conference with the Colorado Industrial Commission, to include some of our employees.

"This conference was later fixed by the Industrial Commission to meet at the Capitol Building on July 26. On the day set for this meeting Mr. Moran and John McLennan stated that the miners refused to meet at the State Capitol, and as a result of this refusal the conference was held at my office.

"Up to this time no list of grievances had been furnished to the Industrial Commission, although the chairman of the commission had twice written to Mr. Moran asking for such a list.

"At the conference in my office a list of alleged grievances was presented. Most of them were either trivial or so general in their nature that they contained no specific charges of injustice and so could not be investigated. Mr. Moran himself stated that the principal demand was for recognition of the United Mine Workers of America and for an abandonment of the industrial representation plan.

"Mr. Moran proposed submission of all grievances, including demand for union recognition, to arbitration. I declined this proposition, but offered to either adjust all grievances, except the demand for recognition, through the State Industrial Commission, or to leave them to a committee composed of four employees selected by the delegates present in the conference, and four officers of the company, sitting with a member of the Industrial Commission as umpire, or to refer them to the State Industrial Commission for settlement.

"Mr. Moran declined these propositions, and stated that he was not willing to leave any matter to the State Industrial Commission, and that he was not willing to discuss further adjustment of grievances unless the demand for recognition of the union was considered. He and his associates abruptly abandoned the conference, refusing to continue with a discussion of the grievances that had been submitted, although urged by me to do so.

"I stated the following reasons for refusal to recognize the United Mine Workers' organization:

"1. Such recognition would mean at least partial abandonment of the industrial representation plan and agreement, which were adopted by both employees and the company, and which are proving satisfactory to the company and to most of its employees.

"2. An agreement with the United Mine Workers of America would apply to only a portion of the employees, while the present agreement is with all employees.

"3. Such an agreement would be unfair to that large body of employees who prefer not to join the union, many of whom have sought employment with this company to avoid working under union conditions, and who have a right to expect that the company will live up to the agreement now in force.

"4. While the company stands ready to promptly consider and adjust all grievances, or to leave their settlement to the State Industrial Commission, it agrees with the position taken by the Council of National Defense that the standards which have been established should not be changed during this war, when coal production is so vital to the interests of the nation, and it believes that its employees will agree with the statement of Secretary of Labor Wilson, quoted below, and which actually describes the condition in Colorado Fuel and Iron Company coal camps:

"If you can get a condition where efforts to organize the workers are not interfered with, and where a scale of wages is recognized that maintains the present standard of living, it occurs to me that for the time being no stoppage of work should take place for the purpose of forcing recognition of the union."

"The Colorado Fuel and Iron Company will continue to operate under the industrial representation plan and agreement, which it believes have been satisfactory to a large majority of its employees, in spite of the persistent hostility of union officials and organizers, who have had free access to our camps. The officers stand ready at any time to adjust grievances by the methods prescribed in this plan, which provides for final appeal in every case to the State Industrial Commission.

"The company is earnestly striving to protect and improve the interests of its employees. Its loyalty to them cannot be questioned, and it naturally expects equal loyalty on the part of the employees toward the company and the mutual interests of both company and employees, as outlined in the industrial representation plan. In view of the present emergency, I agreed to this unusual conference for the adjustment of grievances, but shall expect that hereafter all grievances will be taken up through the regular channels provided in the plan.

"If the United Mine Workers of America insist upon calling a strike, it will be on the sole issue of union recognition, which will not be granted. Such action would be in direct defiance of the advice of Secretary of Labor Wilson, and I confidently believe that the larger portion of our employees would refuse to leave their work.

"As I have already stated to the Colorado Industrial Commission, 'unless, contrary to my belief, there are serious grievances as to either wages or working or living conditions which the company officials have refused to fairly adjust, it would certainly be little short of treason to attempt to precipitate a strike among coal miners at this critical time in the history of our country.'"

## VOLUNTEERS IN COOPERATIVE SERVICE

The 1917 Membership Committee, Dr. Henry Mace Payne, Chairman, has been busy. The work of the American Mining Congress has been growing steadily and surely. Each year has seen the affiliation of a larger number of the nation's most prominent mining men, representing every branch of the industry. Below is given a list of those who have recently joined the "ranks of cooperation." These men represent three of the largest industries in the world—coal, iron and steel, and oil.

### MINNESOTA

#### DULUTH

W. J. Oleott  
M. W. Alworth  
James D. Ireland  
R. M. Sellwood  
A. M. Chisholm  
D. B. McDonald  
William Wearne  
B. M. Pattison  
G. A. St. Clair  
The Shawmut Company  
G. B. Hawkins  
P. H. Nelson  
J. H. Hearing  
W. W. Walker  
Pentecost Mitchell  
W. W. J. Croze  
Edward J. Maney  
Frank Adams  
J. S. Washburn  
Clement K. Quinn  
Walter B. Congdon  
H. C. Dudley  
John H. McLean  
David H. Williams  
Dr. Dana C. Rood  
Francis J. Webb  
William G. La Rue  
I. Freimuth  
John A. Savage  
Robert B. Whiteside  
C. H. Munger  
Duluth Boiler Works  
J. S. Lutes

#### IRON TON

Hill Mines Co.  
J. Wilbur Van Evera  
A. A. Mackay

#### IRON MOUNTAIN

G. A. Richards

#### CROSBY

Leonard C. David  
Thomas Turnbull

#### IRON RIVER

E. C. Bowers  
Rudolph Ericson  
D. H. Campbell  
James S. Wall

#### RIVERTON

Frank Hutchinson  
M. W. Foard

#### MISCELLANEOUS

Benj. C. Neely, Crystal Falls, Mich.  
A. Y. Peterson, Chisholm, Minn.  
W. J. West, Virginia, Minn.  
Charles W. Potts, Deerwood, Minn.

#### MINNEAPOLIS

George P. Douglas  
Fred B. Snyder

John S. Pillsbury  
Charles S. Pillsbury  
C. C. Prindle  
Frank M. Warren  
S. Pennington  
Charles H. Robinson  
R. M. Bennett  
Alfred F. Pillsbury  
F. A. Chamberlain  
Franklin W. Merritt  
George H. Warren

### PENNSYLVANIA

#### PHILADELPHIA

William J. Faux, 6024 Wayne Avenue  
H. H. Lineaweaver & Co., Inc., West End  
Trust Building  
Westmoreland Coal Co., S. P. Hutchinson,  
222 S. 3d St.  
Madeira, Hill & Co., North American Building  
J. S. Wentz Company, Land Title Building

#### WILKES-BARRE

E. J. Newbaker  
John M. Humphries  
George F. Lee  
Douglas Bunting  
C. F. Huber  
Robert A. Quinn  
Carleton C. Jones  
S. T. Nicholson

#### SCRANTON

William W. Ingalls  
William L. Allen  
Cadwallader Evans, Jr.

#### HAZLETON

W. H. Davies  
J. Elmer Jones

#### MISCELLANEOUS

W. T. Payne, Kingston  
E. H. Suender, Frackville  
E. S. Stackhouse, Shickshinny  
James Archbald, Pottsville  
G. B. Markle Company, Jeddo  
T. M. Dodson, Bethlehem

### CALIFORNIA

#### SAN FRANCISCO

Fletcher Hamilton  
Honolulu Consolidated Oil Company  
F. B. Henderson  
Arthur F. L. Bell  
Universal Oil Company  
A. F. Morrison  
R. P. Schwerin  
A. L. Weil  
General Petroleum Company

#### LOS ANGELES

Kern River Oilfields of California, Ltd.  
American Trona Corporation  
R. E. Maynard  
F. Chappellet  
Lionel T. Barneson  
Union Oil Company of California  
Andrews, Toland & Andrews  
W. B. Scott  
Wm. Z. McDonald  
Trojan Oil Company

#### BAKERSFIELD

W. J. Schultz  
H. I. Tupman  
W. H. Hill  
C. A. Barlow  
Alex. Wark

#### MARICOPA

Angus J. Crites

#### GRASS VALLEY

North Star Mines Company



**COLORADO****DENVER**

George L. Nye  
Max Schott  
George L. Felt  
Stanley M. Walker  
Federal Exploration Co.  
Ruth Lund A. M. Co.

**COLORADO SPRINGS**

George M. Taylor

**TEXAS****HOUSTON**

Producers Oil Company

**ILLINOIS**

Carroll Miller, Aurora

**OKLAHOMA**

E. V. Crowell, Wann

**WASHINGTON**

Central Coal Company, Seattle

**NEW YORK CITY**

Felix A. Vogel

**OHIO**

S. M. Dunbar, Steubenville

## **COAL MOVEMENT SHOWS BIG INCREASE OVER 1916**

**Total of 129,721 More Cars Moved in July  
of This Year Than in Corresponding  
Month of Last Year.**

Reports just received by the Railroads' War Board show that the railroads carried 129,721 more carloads of bituminous coal from the mines in July this year than during July, 1916.

This increase, which amounts to 20.4 per cent, makes available for consumption 6,486,000 tons of coal in excess of the amount that would have been available had the railroads merely duplicated their July, 1916, performance. Through cooperative effort, however, and by giving preference to the movement of coal, the roads that handle the bituminous product loaded 764,965 cars last month, as against 635,244 cars in July, 1916.

The first problem to which the Railroads' War Board addressed itself, after being appointed to operate the railroads of the United States as a single transportation unit, was that of increasing the movement of coal and iron ore.

The results so far achieved reflect great credit upon the effectiveness with which the railroads have addressed themselves to their task. The fact should not be overlooked, however, that the country this winter faces greater demands for coal and other traffic than ever before in its history, and the railroads are now working might and main in

the interest of national efficiency and welfare to utilize effectively every faculty they possess.

The railroads achieved an increase in their average daily loading of bituminous coal in July this year over the average amount loaded in June this year, loading an average of 30,599 cars a day in July, as compared with 30,059 cars in June. There was an increase in the average daily loading in all districts east of the Mississippi, and an actual increase in the number of cars loaded in July this year compared with the month previous in the low volatile fields of Pennsylvania, Maryland, West Virginia, and eastern Kentucky and the high volatile coal fields of West Virginia.

The most notable increase in the total shipments in July this year as compared with July, 1916, occurred in Illinois, Indiana, and western Kentucky. It amounted to 84 per cent.

The total increase in the amount of bituminous coal handled by the railroads for the months of April, May, June, and July this year over the same months last year amounts to 578,536 cars, or approximately 28,886,000 tons. This is 25.10 per cent more than the amount handled for these four months in 1916, and is indicative of the increased efficiency shown by the railroads since they voluntarily agreed to merge competitive activities and coordinate their operations in a single continental railway system in order to produce a maximum of national transportation efficiency during the period of the war.

## **WEEKLY FIGURES ON COKE PRODUCTION TO BE ISSUED**

No study of coal production, possible and attained, could be complete which did not embrace the operations of coke plants. Consequently the Survey has begun a weekly analysis of the output of the great beehive coke region of Central Pennsylvania, including the Connellsville, Greensburg, and Latrobe areas. Reports of shipments and reasons for failure to attain maximum output, received by the Geological Survey from seventy-two beehive coke operators, are summarized. The base used in calculating percentage of capacity attained in the great majority of cases is the railroad's rating of the mine, which in the region in question is in excess of the capacity of the mine possible with its present labor force. The figures are therefore not comparable with those published for coal mines which use as a base the output when the mine runs full-time with the force of laborers at the moment available.—*From the Geological Survey's Weekly Coal Statement.*

T. L. Lewis, secretary of the Splint and Gas Coal Association, Charleston, W. Va., spent several days in Washington and New York last month.

# U. S. PLACER MINING LAWS AS APPLIED TO OIL

BY JOSEPH W. THOMPSON

The original United States Mining Statutes recognized existing distinctions between vein or lode claims and placer claims. The provision as originally adopted, and as it still exists, is to the effect that claims usually called "placers" include "all forms of deposits excepting veins of quartz or other rock in place."<sup>1</sup> Vein or lode claims include "veins or lodes of quartz or other rock in place bearing gold, silver, cinnabar, lead, tin, copper, or other valuable deposits."<sup>2</sup> By judicial construction, the exception of veins of quartz, or other rock in place in Section 2329, include deposits of any mineral substances found as "rock in place."

Six minerals only are mentioned by name in the provisions covering both lode and placer locations; but neither lode nor placer locations are limited to the minerals named.<sup>3</sup> The real distinction under the different sections of the statutes, as judicially construed, is in the form of the deposit and not the name or character of the mineral. It is a geological fact that the mineral substances named, perhaps without exception, as well as others known or since discovered, may be found either as rock in place or in the form of placer deposits. The sequel has abundantly demonstrated the wisdom of the law makers in not attempting to name the particular minerals that can be located either as lode or placer locations. Both the lode and the placer provisions have already been extended and held to include an infinite variety of mineral substances, and the provisions are broad enough to include every substance that may yet be discovered that scientists and geologists shall name as minerals.<sup>4</sup>

## MINING STATUTES APPLY TO OIL LANDS

On August 27, 1896, the General Land Office refused a patent for an oil location on the theory that lands containing petroleum did not fall within the contemplation of the mining laws.<sup>5</sup> But on November 6, 1897, the Land Office reversed its decision and held that lands chiefly valuable for their petroleum deposits were locatable as placer claims under the mining laws.<sup>6</sup>

After the first decision and to cure the ill, the Congress on February 11, 1897,<sup>7</sup> by express enactment provided "that lands containing

petroleum or other mineral oil and chiefly valuable therefor," are locatable under the placer mining laws. The second decision of the Land Office was based upon the principle that oil is, in fact, a mineral and within the meaning of the original mining statutes, and the Act of February 11, 1897, seemed to have no influence whatever on the decision. As the law now stands both on principle and on express statutory provision, lands chiefly valuable for their oil content may be located, held and patented as placer claims.

## PETROLEUM STATUTE— CONSTRUCTION

The oil location statute of February 11, 1897,<sup>8</sup> above referred to is peculiar in its wording with reference to lands containing petroleum. This Act changes as to these lands the statutory rule that has obtained since the adoption of the original United States Mining Statutes of 1866. Prior to this Act locations of all kinds were made for "valuable mineral deposits in the public lands." The provision of this Act is to the effect that competent persons may locate "lands containing petroleum or other mineral oils, and chiefly valuable therefor." Under the old statute, the location was made with reference to the value of the mineral deposit, without regard to the character or value of the land. Under this statute oil locations must be made on lands that are chiefly valuable for their oil content. The value given the land by the oil therein is the determining factor that subjects it to location under this act. The value of land for the oil contained must exceed its value for any or all other purposes. Under the former mining statute the value of the deposits is the criterion, but under this statute, it is the value of the land given it by the oil deposit.

This petroleum statute is remedial and was intended to promote oil locations. The law-makers evidently had in mind the well-known fact that oil may be discovered where the surface of the land is level and fertile and valuable for surface purposes; they knew, too, that oil is discovered in mountainous districts and in regions where the land is of little or no value for surface purposes. It was not intended that lands valuable for cultivation or grazing and general agricultural purposes

<sup>1</sup>United States Revised Statutes, Section 2329.

<sup>2</sup>United States Revised Statutes, Section 2320.

<sup>3</sup>San Francisco Chemical Co. v. Duffield, 201 Federal 830;

Duffield v. San Francisco Chemical Co., 205 Federal 480.

<sup>4</sup>United States Mining Statutes Annotated, pp. 18, 518, 689.

<sup>5</sup>Union Oil Co., *In re*, 23 Land Decisions, 222.

<sup>6</sup>Union Oil Co., *In re*, 25 Land Decisions, 351.

<sup>7</sup>29 Statutes at Large 526, Petroleum Act.

<sup>8</sup>29 Statutes at Large 526.



should be acquired and held under patent for oil purposes, unless the lands were chiefly valuable for such purpose. The same rule must be applied to the rugged lands of the mountainous districts and before these can be located, it need only be made to appear that they are chiefly valuable for oil.

This peculiar feature of this petroleum statute has a direct bearing on the question of the sufficiency of a discovery of oil to justify an oil location. Judge Bledsoe, in a recent case in reference to the wording of this statute, said: "This fact should not be lost sight of in defining what will suffice for a discovery under the oil statute." In defining discovery with reference to this feature of the petroleum statute the Judge further said: "This discovery in its broad and comprehensive sense is the doing of or the accomplishing of that thing with respect to the land sought to be appropriated which serves to impress upon it the quality of being land which is open to appropriation or exploration in the manner and pursuant to the law sought to be made use of."<sup>9</sup> The logic of this statute and of this holding is that a comparative greater oil content must be established as a question of discovery where the land is valuable for other purposes, than where the land is not valuable for any purpose. Thus a discovery of petroleum in lands in Oklahoma or California, worth \$100 per acre for agricultural purposes, must establish with reasonable probability at least that the land is more valuable for the oil content, whereas, a slight discovery or the presence of a small quantity or flow of oil might be sufficient to establish the oil value of land in a region where the surface value is slight or nil. If, as suggested, this statute was intended to promote oil locations, it was certainly not the design to require proof of discovery of a profitable yielding oil reservoir in lands otherwise worthless.

### DISCOVERY AS BASIS OF RIGHT

The rule under all mining statutes is that a discovery of mineral is essential to a mining location. No valid location can be made without a discovery of mineral. The theory of the United States statutes is that discovery and location are a unit. The requirements of the statutes on this subject are mandatory. The object of the law in requiring the discovery to precede a location is to insure good faith on the part of the locator and to prevent frauds upon the Government by persons attempting to acquire patents to lands not min-

eral in character. Discovery is said to be the initial act upon which all mining rights are based and is the source of title to mining claims located upon the public domain. Ordinarily no rights can be acquired by a location made without a discovery of minerals within the meaning of the statute and discovery is as essential to any right or title to a mining claim as the location itself. These principles apply alike to lode and placer claims and the requirement of discovery has been expressly applied to lands containing petroleum and other oil.<sup>10</sup>

### DISCOVERY IN LODGE AND PLACER CLAIMS—DISTINCTION

A distinction is made as to the requirement between discovery or the sufficiency of discovery in a lode claim and in a placer claim. The strictness as to proof of discovery in lode claims is not required in placer claims.<sup>11</sup> In placer locations the discovery is sufficient if it gives reasonable evidence of the fact that the ground is valuable for such mining.<sup>12</sup> One reason for this rule is found in the fact that placer mining may be carried on profitably with far less expense than lode mining. This rule was adopted with reference to the mining of gold in placer mines as compared with lode mining. The same distinction applies with equal force to the mining of an oil claim as compared with the mining of a lode claim. The expense of sinking a hole six or eight inches in diameter a few hundred or one or two thousand feet in depth and the subsequent pumping of oil when discovered is inconsiderable as compared with the initial investment in mining machinery and the continuous work of mining and milling the ore. A discovery of sufficient value or quantity to induce a prudent mind in the expenditure of money and labor in the one case might fall far short of justifying the same prudent mind in the expenditure of money and labor in the other case. So while the rules as to discovery in lode claims are applicable to placer, yet the rule is more charitable as applied to all classes of placer locations.

### SUFFICIENCY OF DISCOVERY— QUESTION OF FACT

Section 2319,<sup>13</sup> simply provides that all valuable mineral deposits in the public lands are free and open to exploration and purchase by qualified persons. Section 2320,<sup>14</sup> is to the effect that no location shall be made until the discovery of a vein or lode within the limits

<sup>9</sup>United States v. McCutcheon, 238 Federal 575, p. 584.

<sup>10</sup>Bay v. Oklahoma Southern Gas, Oil and Mining Co., 13 Okla. 425, p. 436; Nevada Sierra Oil Co. v. Home Oil Co., 98 Federal 673; United States v. McCutcheon, 238 Federal 575, p. 590.

<sup>11</sup>Cook v. Johnson, 3 Alaska 506, p. 541.

<sup>12</sup>Chrisman v. Miller, 197 U. S. 313, p. 323; Steele v. Tanana Mines R. Co., 148 Federal 678, p. 679.

<sup>13</sup>United States Revised Statutes.

<sup>14</sup>United States Revised Statutes.

of the claim located. But what is necessary to constitute a discovery of mineral is not prescribed by statute and there is no statutory declaration as to the extent of the value of the mineral deposits that may be appropriated, or of the vein or lode that may be located.<sup>15</sup> The statute leaves it with the single expression: "All valuable mineral deposits." The question as to the sufficiency of the value of any given mineral deposit to meet the statutory requirement of discovery is a question of fact under or in connection with varying circumstances. The contested cases universally concede that discovery is a question of fact. The law does not contemplate that the locator shall show a paying mine at the time he makes his location.<sup>16</sup> A prospector is not prohibited from making a valid location unless and until he has fully demonstrated that the vein or lode or other rocky matter bearing gold or silver discovered will pay all the expenses in recovering, extracting, crushing, and reducing the ore and leave him a profit.<sup>17</sup> If proof of a discovery of a commercial value were a condition precedent to a valid location, many titles to mines that subsequently proved valuable would have failed.

#### **WILLINGNESS TO MINE AS ELEMENT IN DISCOVERY**

The human element forms an equation in the problem of the sufficiency of discovery, and the law is satisfied where minerals have been discovered sufficient in quantity to justify a person of ordinary prudence in making an expenditure of labor and money with a reasonable prospect of success in developing a valuable mine.<sup>18</sup> Any deposit of mineral matter or indication of a vein or lode in a mineralized zone or belt with defined boundaries that a person is willing to spend his time and money to develop in expectation of finding ore may be the subject of a valid location.<sup>19</sup> A locator makes a discovery within the statute when he has found mineral in place in sufficient quantity to justify him in the expenditure of time and money thereon, whether the rocks assays high or low.<sup>20</sup> A vein or lode discovered in the side of a hill or mountain within well defined walls may assay but a small amount per ton as compared with the cost of extracting, removing, and milling the

ore, but the miner may have good reasons to believe from his experience and from that of others in the same mining district that the ore is liable to be richer at a greater depth than at the point of discovery, and such may be a discovery on which to base a valid location.<sup>21</sup> The sufficiency of a discovery is not made to depend alone upon the commercial value of the mineral in sight, but it answers if it is sufficient to justify a person of ordinary prudence in making an expenditure of money or labor with a reasonable prospect of success, or if a person is willing to give his time and money to develop the same in expectation of finding ore.

"Facts which are within the observation of the discoverer and which induce him to locate should be such as would justify a man of ordinary prudence, not necessarily a skilled miner, in the expenditure of his time and money in the development of the property."<sup>22</sup> The willingness alone of a locator, though a man of ordinary prudence, to expend time and money is not the test of justification, but it is equally true that there can be no justification in the absence of a willingness to rely, and of an actual reliance upon the observed conditions.<sup>23</sup> "The attitude of the discoverer himself toward the sufficiency of his discovery is a potent factor in the determination of the question as to justification."<sup>24</sup>

*(To be continued.)*

#### **ASHURST ARRAIGNS I. W. W. IN A 200-WORD SPEECH**

Senator Ashurst of Arizona arose in his place in the Senate recently and in a few words condemned the I. W. W. organization severely. It is agreed that no more effective criticism of the organization could have been offered had Senator Ashurst spoken an hour. He said:

"Although the Senate of the United States is an unusually well-informed body of men, I find nevertheless a number of Senators are not familiar with just what the I. W. W. menace throughout the Western states means.

"With the I. W. W.'s perjury is a fine art. With this organization murder is reduced to a science, and after the I. W. W. slays its unoffending victim the accused and guilty

<sup>15</sup>Chrisman v. Miller, 197 U. S. 313, p. 321.

<sup>16</sup>Cook v. Johnson, 3 Alaska 506, p. 541; Shreve v. Copper Bell Mining Co., 11 Mont. 309, p. 343.

<sup>17</sup>Book v. Justice Mining Co., 58 Federal 106, p. 124; Fox v. Myer, 20 Nev. 169, p. 185.

<sup>18</sup>Chrisman v. Miller, 197 U. S. 313, p. 322.

<sup>19</sup>Cascaden v. Bartolis, 162 Federal 267, p. 268; Castle v. Womble, 19 Land Decisions 455, p. 457; Hayes v. Lavagnino, 17 Utah 185, p. 196.

<sup>20</sup>Migeon v. Montana, etc., R. Co., 77 Federal 249.

<sup>21</sup>Book v. Justice Mining Co., 58 Federal 106, p. 124; Holdt v. Hazard, 10 Calif. App. 410.

<sup>22</sup>Castle v. Womble, 19 Land Decisions 455, p. 457.

<sup>23</sup>United States v. McCutcheon, 238 Federal 575, p. 589; United States v. Ohio Oil Co., 240 Federal 996, p. 1000.

<sup>24</sup>Cook v. Johnson, 3 Alaska 506, p. 536; United States v. McCutcheon, 238 Federal 575, p. 590.



person frequently escapes conviction by reason of a prearranged alibi, because, as I said, the I. W. W. has reduced perjury to a fine art.

"At a later time I expect to deal with this subject and explain some of the views and activities of this treasonable organization, but this morning I will simply ask to have the secretary read at the desk a short extract from a very reliable Arizona weekly newspaper, which gives some illumination upon the activities and views of the I. W. W. I have frequently been asked what 'I. W. W.' means. It means simply, solely, and only 'Imperial Wilhelm's Warriors.'"

The article referred to by the Arizona Senator and which was read to the Senate is as follows:

"The I. W. W. menace might be easily handled and put out of existence if the Federal Government would get busy and place the arch enemy of all governments, William Haywood, behind the bars on a charge of treason in the time of war.

"Along with Haywood should go every member of the I. W. W., a special effort being made to get the big leaders first. No sympathizer of the I. W. W. propaganda should enjoy the liberty of this country only long enough to place him in jail to wait his trial for treason.

"There is no room in this country for people like Haywood, Berkman, and the female species represented by Emma Goldman. No form of government suits them, because they do not believe in governments.

"As evidence of the total depravity of the followers of Haywood, the following verse from the I. W. W. song-book is given:

"'Onward, Christian soldier, rip and tear and smite;  
Let the gentle Jesus bless your dynamite;  
Smash the doors of every home, pretty maidens seize;  
Use your might and sacred right to treat her as you please.'

"This particular verse exemplifies to the fullest degree just what the I. W. W. are, what they believe in, and what they would do if they ever got in power in this or any other country."

## **METALLURGICAL PRACTICES IMPROVE UNDER SPUR OF WAR**

**G. K. Burgess, of the American Scientific Commission, Makes Interesting Observations on Visit in France.**

No adequate idea of the important part mineralogy is playing in the present war can be obtained without a visit to the front and to the plants in France and England, which are supplying much of the needed war material. While the great quantities of munitions are being manufactured in this country, it is not being conducted under the same

pressure as in France and England. This is the testimony of many engineers who have had an opportunity to view the situation at close range. Dr. G. K. Burgess, in charge of the metallurgical work being done by the Bureau of Standards, who was a member of the American Scientific Commission which visited England and France immediately after the entrance of the United States into the war, made many interesting observations while on this trip. He confirms the frequently made statement that this is a metallurgical war.

The commission, of which Dr. Burgess is a member, left the United States on the first ship which sailed after a state of war was declared to exist. They were afforded every facility by the English and French governments to acquaint themselves with the technical work which is being brought to bear so effectively in the waging of this war.

Dr. Burgess was particularly impressed with the magnitude of operations. While he had kept in close touch with the situation, he was amazed at the scale on which everything is being conducted and particularly at the scope of the technical work that is being done.

"Surprising progress has been made in metallurgical practices," says Dr. Burgess. "The details of the development will be a revelation when the war is over. Under the exigencies of war metallurgy and chemistry have taken enormous strides."

Dr. Burgess was impressed particularly with the enormous development of hydro-electric plants in the French Alps. From his observation, he is convinced that the United States must produce a sounder type of ingot. In Europe the universal practice is to cast the large end up. This eliminates with certainty all piping. It is his idea that one of the most important things for the United States to do is to build up reserves of fuel and metals in France.

By establishing ministries of munitions. France and England have made invaluable additions to their chief administrative boards, Dr. Burgess thinks.

While in Europe Dr. Burgess took special note of the work being done by the scientific societies. He also familiarized himself with their practice with regard to the recruiting of scientific men. From experience the belligerents have safeguarded recruiting so as not to weaken themselves by placing their best brain power in positions of great hazard.

The general public in the United States is not familiar with the fact that Verdun was a metallurgical battle. The fact that the French were so firmly established at the point so close to the great iron producing region held by the Germans was the source of constant menace. It was to relieve this danger that the Crown Prince made his desperate effort to break the French line at this point, and also accounts for the persistency with which activities are continued on this sector of the battle front.

## POOLING OF TIDEWATER COAL GREAT SUCCESS

**More than 150,000 Cars will be Released by  
New Plan for Handling Shipments at At-  
lantic Ports**

Bituminous coal, amounting to 36,000,000 tons a year, is being successfully pooled pending boat shipment at four Atlantic Coast ports—New York, Philadelphia, Hampton Roads and Baltimore. Previous detention at tidewater of coal pending shipment averaged five and one-half days. If this detention can be reduced to three days it is expected seven million more tons of coal will be moved with the same car equipment, or the equivalent of about 150,000 cars be released for other service. The Railroad War Board and the Committee on Coal Production of the Council of National Defense, co-operated with the railroads and the three hundred shippers who route coal via the Atlantic ports, to establish the Tidewater Coal Exchange, in Washington, which is maintained at the expense of the railroads.

The first meeting of shippers was called on May 31, by Chairman Peabody of the Committee on Coal Production, who explained that the purpose of the meeting was to formulate a definite plan similar to one already in vogue at Lake Erie ports, for pooling all tidewater coal shipments. Three of the five railroad executives who form the Railroad War Board—Rea, Elliott, Kruttschnitt and Holdon, told the shippers of the necessity of some plan for pooling coal at Atlantic ports just as it is being pooled on Lake Erie. A committee of twenty-five—five from New England receivers, five from the producers of bituminous coal, five producers of anthracite and five representing vessel ownership—was appointed. This committee, with Mr. Elliott acting as chairman, accepted the report of committee urging that a tidewater pool be established and that a Commissioner be selected with central offices in Washington and that four Deputy Commissioners be selected for the ports of New York, Philadelphia, Baltimore and Hampton Roads. The election of Rembrandt Peale as Commissioner then was announced, and the selection of the Deputy Commissioners followed.

Pooling coal entails sacrifice by many operators. Coal shipments are being standardized, so that instead of there being 1166 different classifications each of which requires considerable switching when a boat for any particular kind arrives coal now is classified into only 45 kinds. Coal of like kinds, after careful inspection, is being pooled; that is, run on one track so that, when a boat arrives, to take a cargo of 100 cars, for instance, of a particular classification, from Baltimore to Boston, the first 100 cars of that classification are run on board and dumped. Both cars and ships are thus

more quickly utilized. The cars are emptied and turned to other uses and the vessels do not have to wait while cars of a certain consignment are extricated from a crowded switchyard.

The Tidewater Coal Exchange is like a bank or clearing house. All tidewater coal is consigned to it and each shipper reports shipments to it daily so that whenever his vessel or barge arrives at Baltimore, or any of the three other ports, he can authorize the Deputy Commissioner in charge to load coal from any track to the extent of his credit, and the Commissioner, if he desires to expedite the movement of the vessel, can authorize the movement of an equivalent of the shipper's coal that is in transit. It is possible for one shipper to transfer credit in coal to another in writing. The rules also provide for careful inspection, daily reports, the adjustment of differences, embargoes on the shipments of any member not providing vessel and for pro-rate demurrage.

The Deputy Commissioners are: For Baltimore, G. F. Malone, formerly superintendent of car service, Baltimore & Ohio Railroad; for New York, J. W. Searles, formerly general sales manager of the Pennsylvania Coal & Coke Corporation; for Hampton Roads, J. W. Howe, formerly coal freight agent, Chesapeake & Ohio Railroad; and for Philadelphia, Harry Boulton, vice president of the Association of Bituminous Coal Operators of Central Pennsylvania.

## IRON ORE PRODUCTION EXCEEDS ALL RECORDS

**Increase in 1916 Over Big Production of 1915  
Was 40 Per Cent, While Increase in Value  
Was 80 Per Cent.**

The iron ore mined in the United States in 1916 reached a total of 75,167,672 gross tons, the greatest annual output ever made. The shipments from the mines in 1916 were 77,870,553 gross tons, valued at \$181,902,277. The quantity mined in 1916 was more than 19,600,000 tons greater than that mined in 1915. The increases in quantity and in value of iron ore shipped in 1916 amounted to 40 and 80 per cent, respectively. The average value per ton at the mines in 1916 was \$2.34, as against \$1.83 in 1915. These figures, which were compiled under the direction of E. F. Burchard, of the United States Geological Survey, include for 1916 only iron ore containing less than 5 per cent of manganese.

### IRON MINING BY STATES

Iron ore was mined in twenty-four states in 1916 and twenty-three in 1915. Two of these states, Nevada and Utah, produced iron ore for metallurgic flux only; part of the output of Colorado and New Mexico was used for smelter flux and part for pig iron and ferro alloys; Michigan and Minnesota



report the production of some ore used in open-hearth furnaces to "reduce carbon," and North Carolina reports the production of magnetite ore, used in a puddling furnace at Knoxville, Tenn.; the remaining states produced iron ore for use in blast furnaces only, except small quantities used for paint from Michigan, New York, and Wisconsin. Minnesota, Michigan, and Alabama, which have for many years produced the largest quantities of iron ore, occupied in 1916 their accustomed places.

#### LAKE SUPERIOR RANGES

All the ranges in the Lake Superior district mined a larger quantity of iron ore in 1916 than in 1915, and the largest increases were in the Gogebic and Menominee ranges—54 and 43 per cent, respectively. The output of the Cuyuna Range exceeded 1,500,000 tons for the first time.

#### LARGEST IRON ORE MINES

Twelve mines in the United States produced more than 1,000,000 tons of iron ore each in 1916, five more than in 1915. First place in 1916 was held by the Hull-Rust mine, at Hibbing, Minn.; second place by the Red Mountain group, near Bessemer, Ala.; third place by the Fayal mine, at Eveleth, Minn., and fourth place by the Mahoning mine, at Hibbing, Minn. The production of these mines in 1916 was, respectively, 7,658,201, 2,899,588, 2,252,008, and 2,215,788 tons. The increase at the Hull-Rust mine was 232 per cent, making the production of this one mine more than one-tenth of all the ore mined in 1916. These records illustrate the rapidity with which the rate of output of mines in the Lake Superior district may be increased. None but open-pit mines could be made to respond to demand to such a degree.

#### PIG IRON

The production of pig iron, including ferro alloys, was 39,434,797 gross tons in 1916, compared with 29,916,213 gross tons in 1915, an increase of 32 per cent, according to figures published by the American Iron and Steel Institute, February 24, 1917. The pig iron, exclusive of ferro alloys, sold or used in 1916, according to reports of producers to the United States Geological Survey, amounted to 39,126,324 gross tons, valued at \$663,478,118, compared with 30,384,486 gross tons, valued at \$401,409,604, in 1915, a gain of 29 per cent in quantity and 65 per cent in value. The average price per ton at furnaces in 1916, as reported to the Survey, was \$16.96, compared with \$13.21 in 1915, an increase of 28 per cent. According to market quotations, the increase from January to December, 1916, in the prices of standard grades of pig iron at the large iron centers ranged between 45 and 68 per cent, but this increase was confined almost entirely to the last two or three months of the year, and does not affect the average so greatly.

## FURTHER HEARINGS ON OIL LEASING BILL ARE ASKED

### Max Ball Declares Stress Has Been Placed on Remedial Provisions to the Exclusion of Other Effects of the Legislation

The three bills affecting oil lands (S. 45, S. 2012, and H. R. 3232) have in common certain serious weaknesses, Max Ball, formerly law officer of the Bureau of Mines believes. In this connection he says:

"The Committee on Public Lands has devoted practically unlimited time to those interested in remedial legislation of one sort and another. I cannot believe that even at this late date it is intended to refuse a hearing to those interested in the development of the great body of oil-bearing public lands and in preventing the waste of a mineral of such military and economic importance.

"There are certain features in the Walsh bill that, if enacted into law, would be almost certain to bring about enormous waste of oil and gas—a result the public is vitally interested in preventing. These same features make the bill equally undesirable from the standpoint of the oil industry, a considerable part of which is ready, if given a fair opportunity, to spend large sums of money in the Rocky Mountain region in the hope of developing fields to rival Salt Creek and making the production of the Mountain States a large factor in the prosecution of the war. There are, I am sure, many representatives, both of the public's point of view and of the point of view of the oil industry, who would now be glad to appear before the Committee if given the opportunity to do so, with the assurance that the merits of the bill rather than proposed amendments to it were to be discussed.

"I recognize that these people have for the past four or five years had opportunity to be heard and have not availed themselves of it. This has been due to two causes. First the oil journals and technical press have treated the proposed legislation as though it involved only remedial features, and the oil industry has not until very recently realized that general legislation affecting the public domain was under consideration. Second, some of the closest students of the situation are in the Government service and are therefore prevented from volunteering their opinions regarding legislation that has received the approval of the head of the Department. The views of these men can be obtained only by calling for them in such a way as to insure the men giving them against official displeasure. Their views would, however, be invaluable to the Committee, as would the views of a large number of men in the oil industry whose public spirit can not be doubted and who would undoubtedly ac-

cept the Committee's invitation to review the proposed legislation. Thus the Committee would be able to report a bill founded on the advice of men of long familiarity with oil field conditions, men interested in the production of a maximum amount of oil at a minimum cost and with a minimum of waste.

"As to the matter of acreage, I suggest consideration of the paper on 'Adequate Acreage and Oil Conservation,' read before the American Mining Congress, last November, and of the discussion that followed. The arguments against a fixed term of lease are similar—that it promotes waste by forcing rapid rather than careful development. It is worth nothing that most commercial leases are written for a certain period 'and as long thereafter as oil or gas may be produced therefrom.'

"As chairman of the Oil Board of the Geological Survey, and later as an engineer and law officer of the Bureau of Mines, I have given several years study to problems involved in oil land legislation. I can suggest the names of a number of men, both in the Government service and out, who are familiar with these problems and who might profitably be asked to appear in order that the Committee may be as well advised regarding the general provisions of the bill as regarding the remedial features.

"The hearings so far held, both in this and the two preceding Congresses, have been devoted almost wholly to proposed relief and remedial provisions, with very little discussion of the provisions affecting the great body of the public domain. This is easily understood, since those desiring relief legislation have financial interest in the subject matter much more immediate and pressing than those best qualified to advise regarding the terms and conditions of future leases. I am convinced, however, that there are a number of men familiar with the operation and effects of various leading provisions who would appear before the Committee if requested and whose testimony would be of great value.

"The general provisions of the bill apply to an area so much greater than the relief provisions, and are of so much greater importance to the public and to America's supremacy in the petroleum industry that I hope the hearings will not be closed until these provisions have received an exhaustive discussion."

### Labor Legislation

In summing up labor legislation in 1916, the Department of Labor features the Act of Congress establishing eight hours as a standard work day for employees operating trains on steam railroads in interstate commerce. Next to this is placed the federal statute excluding from interstate traffic the products of the labor of children employed in mines or quarries under the age of sixteen.

## EMPLOYERS' ASSOCIATION OF MONTANA DOING GOOD WORK

### Agreement Effectuated at Great Falls Regarded as a Good Example to Be Followed.

Encouraging progress is being made by the State Employers' Association of Montana. While the organization is concerned primarily with the labor situation, it is finding many other matters to which it is devoting its attention in the common good.

An example of the type of agreement being effectuated by the Employers' Association of Montana is as follows:

The agreement entered into between Great Falls Branch of the Employers' Association of Montana and the Cascade County Trades and Labor Assembly, is of national interest. It is reproduced in full as follows:

It is hereby agreed between Great Falls Branch of the Montana Employers' Association and the Cascade County Trades and Labor Assembly:

Hereafter all grievances and disputes arising between employers belonging to the Great Falls Branch of the Montana Employers' Association of the State of Montana and the employees belonging to the union composing the Cascade County Trades and Labor Assembly shall be referred to a committee of an equal number of men from both parties hereto for an adjustment.

It is further agreed that no cessation of work, boycotts, banners or action of a similar nature shall be taken by any union or employe on account of jurisdictional disputes or differences among the unions themselves. It is further provided that the craft or union holding jurisdiction over the class of work or over the men involved prior to the dispute shall continue to hold jurisdiction until the two arbitration boards shall have rendered a decision.

Third—A standing grievance committee shall be elected composed of twelve (12) men, six (6) to be elected from each of the parties hereto and to hold office until April 10, 1918, and all grievances, differences and disputes which shall hereafter arise between employers who shall be members of the party of the first part herein and their union employees, shall be submitted to the said grievance committee for consideration and adjustment before any strike, lockout, boycott, secondary boycott or similar action shall be declared or taken by any member of either party hereto, and before any person, place or business shall be bannered or picketed.

It being further understood that after any difference, dispute or controversy shall have been submitted to said grievance committee, that said grievance committee shall be given ten days and opportunity to thoroughly con-



sider and adjust such disputes or controversy, before any action above referred to in the way of a strike, boycott, secondary boycott, lockout, banner or picket shall be taken. It is further provided, however, in case of a tie vote a committee of three shall be elected as follows: Union committee to elect one, and the Employers' Association committee to elect one man, those two to choose a third man, and these three to arbitrate and decide the tie, and their decision shall be final and binding upon all parties hereto. Provided, however, that the election of the committee of three and the deliberations shall be complete within forty-eight hours from the time of the deadlock. And be it further provided, that in case of the inability of the committee of three to reach an agreement within the provided time, the original committee of twelve shall have power to extend them further time.

The parties hereto shall enter into agreements governing the working conditions and wage scales and such agreements shall be acted upon and ratified by the particular unions and the particular branch of the said Employers' Association with reference to which the agreements are made and when so ratified the agreements shall be binding upon all members of the unions and upon all members of the Employers' Association affected thereby. And the parties hereto will pledge their support in securing the complete enforcement of such agreements.

The general agreement to be entered into shall remain in full force and effect for an additional year after January 1, 1918, unless one of the parties hereto shall, not less than thirty (30) days prior to January 1, 1918, give notice to the other party of its desire and intention not to so continue said agreement.

This agreement shall be in full force and effect upon being signed by the president, vice-president and secretary of the contracting parties, and their corporate seal attached thereto.

Note.—The above agreement may be termed a model arrangement for the peaceful adjustment of differences arising between employers and employes, and it marks a new epoch in the industrial life of Great Falls, Montana, a city heretofore handicapped by continual strife between labor and capital. When every community in this state shall have adopted such a plan for the settlement of labor troubles, it can well be said that Montana has shown the way for a practical plan of solving the biggest internal problem in our national life.

#### **Government Using Fabrikoid**

Investigations prove that high-grade leather substitutes are taking the place of leather in many instances. Only recently the Government adopted fabrikoid as its standard for ship upholstery and the same product has been used in the binding of Government books for some time.

## **CONSERVATION OF IRON HELD TO BE VITAL**

### **Geological Survey Calls Attention to Methods Which Will Prolong Life of These Supplies**

The conservation of the iron-ore supplies of the United States, the discovery of new supplies, and the development of methods for rendering supplies of low-grade ore available are vital to the maintenance of the industrial independence and supremacy of this country, notwithstanding the apparent abundance of the supplies at present available, for, as has been pointed out, the reserves of high-grade iron ore now convenient of access are rapidly becoming depleted.

Certain important factors that will aid in prolonging the life of the iron-ore reserves of the United States may be summarized as follows:

1. The steady accretion to the permanent supply of metal and the consequent reduction in rate of increase of production (waste of war not taken into consideration).
2. The adoption of methods of conservation of ore and metal.
3. The increase in imports of ore from Cuba and South America, whose deposits must logically be regarded as a portion of the immediately available reserve, as such ores can be used most profitably and economically in the United States.
4. The further discovery of iron-ore deposits in the Western Hemisphere.
5. The possibility of metallurgic improvements that may enable pig iron to be derived economically from low-grade ores, and the solution of metallurgic problems, including that involving the utilization of titaniferous iron ores, of which there are large deposits not now available.
6. The increase in the price of pig iron, which will bring lower grades of iron ore into the market, thus vastly increasing the tonnage of reserves available.

### **PRINCIPAL FIRMS IN U. S. THAT USE IRON PYRITES**

Owing to the interest in the pyrite situation the following list of principal firms in the United States using pyrites is published:

Acme Mfg. Co., Wilmington, N. C.; Alabama Chemical Co., Montgomery, Ala.; American Agricultural Chemical Co., Montgomery, Ala., with plants at Charleston, S. C., Columbia, S. C.; Boston, Mass., Alexandria, Va., Baltimore, Md., Buffalo, N. Y., Carteret, N. J., Cincinnati, Ohio, Cleveland, Ohio, Detroit, Mich., Elizabethport, N. J., Newark, N. J., Pensacola, Fla., Savannah, Ga., Wilmington, N. C.; American Alkali & Acid Co., Bradford, Pa.; Anderson Phosphate & Chemical Co., Anderson, S. C.; Armour Fertilizer Company, Atlanta Ga., with plants at Chrome, N. J., Jacksonville, Fla., Nashville, Tenn.,

New Orleans, La.; Avery Chemical Co., Lowell, Mass.; Barker Chem. Co., Dunellen, Fla.; Bergenport Chem. Works, Bayonne, N. J.; Blackshear Manufacturing Co., Blackshear, Ga.; Bower Chemical Co., Philadelphia, Pa.; Butterworth & Judson, Newark, N. J.; Buffalo Fertilizer Works, Buffalo, N. Y.; Buagh Chemical Co., Baltimore, Md.; Caroleigh Fertilizer Works, Raleigh, N. C.; Cleveland Cliffs Mfg. Co., Marquette, Mich.; Commercial Acid Co., St. Louis, Mo.; Consolidated Rendering Co., Boston, Mass.; Contact Process Co., Buffalo, N. Y.; Cotton States Seed & Fertilizer Co., Macon, Ga.; Davison Chemical Co., Baltimore, Md.; Detroit Chemical Works, Detroit, Mich.; Empire State Chemical Co., Athens, Ga.; Etiwan Fertilizer Co., Charleston, S. C.; Eureka Fertilizer Co., Perryville, Md.; Farmers Fertilizer Co., Columbus, Ohio; Federal Chemical Co., Nashville, Tenn.; Free State Fertilizer Co., Carrollton, Ga.; Furman Farm Imp. Co., Atlanta, Ga.; General Chemical Co., with plants at New York City, Bayonne, N. J., Buffalo, N. Y., Cleveland, Ohio, Fairfield, Conn., Newell, Pa., Pulaski, Va., Chicago, Ill., Marcus Hook, Pa.; Georgia Fert. & Oil Co., Valdosta, Ga.; Grasseli Chemical Co., with plants at Cleveland, Ohio, Chicago, Ill., Tremley, N. J., Pittsburgh, Pa., Grasseli, Ala.; Griffith & Boyd, Baltimore, Md.; Gulfport Fert. Co., Gulfport, Miss.; Hampton Fertilizer Co., Hampton, Ga.; Harrison Bros., Philadelphia; Home Guano Co., Dothan, Ala.; Home Mixture Guano Co., Columbus, Ga.; International Agricultural Chemical Co., Macon, Ga.; Jackson Fertilizer Co., Jackson, Miss.; Jerecki Chemical Co., with plants at Sandusky, Ohio, Cleveland, Ohio; Jefferson Fertilizer Co., Birmingham, Ala.; Kalbfleisch Chemical Co., New York; Lancaster Chemical Co., Lancaster, Pa.; Chea, Lenning & Co., Philadelphia, Pa.; Mandeville Mills, Carrollton, Ga.; Martin White & Co., New York; Maybank Fertilizer Co., Charleston, S. C.; Meridian Fertilizer Factory, Meridian, Miss., & Hattiesburg, Miss.; Merrimac Chemical Co., Boston, Mass.; Cochrane Chemical Co., Boston, Mass.; Morris Fertilizer Co., Atlanta, Ga.; Mutual Fertilizer Co., Savannah, Ga.; Naugatuck Chemical Co., Naugatuck, Conn.; New Jersey Zinc Co., Hazard, Pa.; New Orleans Acid Co., New Orleans, La.; Old Dominion Guano Co., Atlanta, Ga.; Painter Fert. Co., Jacksonville, Fla.; Parsons Pulp & Lumber Co., Parsons, W. Va.; Pelham Phosphate Co., Pelham, Ga.; Pennsylvania Salt Mfg. Co., Philadelphia and Natrona, Pa.; Phosphate Mining Co., Savannah, Ga.; Planters Chemical & Oil Co., Talladega, Ala.; Planters Fertilizer & Phosphate Co., Charleston, S. C.; E. Raugh & Sons, Indianapolis, Ind.; Read Phosphate Co., Nashville, Tenn., & Charleston, S. C.; Reliance Fertilizer Co., Savannah, Ga.; Richmond Guano Co., Richmond, Va.; Riverside Acid Works, Warren, Pa.; Roanoke Guano Co., Roanoke, Va.; Robertson Fert. Co., Norfolk, Va.; F. S. Royster Guano Co., Norfolk, Va., and Baltimore, Md., Columbia, S. C., and Macon, Ga.; Savannah

Guano Co., Savannah, Ga.; Scott Fertilizer Co., Elkton, Md.; Smith Agricultural Chemical Co., Columbus, Ohio; Smith & Co., Springfield, Ill.; Southern Fertilizer & Chemical Co., Savannah, Ga.; Southern States Fert. Co., Savannah, Ga., and Augusta, Ga.; Standard Guano Co., Baltimore, Md.; Standard Chemical & Oil Co., Troy, Ala.; Standard Guano & Chemical Co.; New Orleans, La.; Swift & Co., with plants at New Orleans, La., Atlanta, Ga., and Wilmington, N. C.; Talladega Mercantile Co., Talladega, Ala.; Tennessee Fertilizer Co., Albany, Ga., and Columbus, Ga.; I. P. Thomas & Son Co., Philadelphia, Pa.; Troup Co., La Grange, Ga.; Tupella Fertilizer Factory, Tupela, Miss.; Union Superphosphate Co., San Francisco, Cal.; Virginia-Carolina Chemical Co., with plants at Alexandria, Va., Albany, Ga., Americus, Ga., Atlanta, Ga., Augusta, Ga., Baltimore, Md., Birmingham, Ala., Blacksburg, S. C., Charleston, S. C., Charlotte, N. C., Columbia, S. C., Columbus, Ga., Durham, N. C., Dothan, Ala., Gainesville, Fla., Greenville, S. C., Lynchburg, Va., Macon, Ga., Memphis, Tenn., Mobile, Ala., Montgomery, Ala., Newbern, N. C., Newnan, Ga., Norfolk, Va., Opelika, Ala., Petersburg, Va., Pon Pon, S. C., Richmond, Va., Rome, Ga., Salisbury, N. C., Savannah, Ga., Sanford, Fla., Social Circle, Ga., Staunton, Va., Shreveport, La., Wilmington, N. C., Winston-Salem, N. C.

#### NEW RECORD IN SHAFT SINKING MADE IN THE CUYUNA RANGE

Crosby, Minn., Aug. 20.—The Joan Mining company lays claim to the record time of the Cuyuna range for shaft sinking, having sunk its shaft No. 4 in twelve days to a depth of sixty feet. The work was under charge of Supt. H. J. Letchel, formerly with the Oliver Iron Mining company on the Mesaba range.

The properties of the Joan Mining company are owned and operated by M. L. Fay, of Duluth, and are considered among the best on the Cuyuna range, much of the ore being high grade manganiferous. Thirty thousand tons will be shipped this season and shipments will start as soon as the railroad is built to the mines. All the machinery is electrically equipped. Shipping from Joan No. 1 mine started last month.

#### Doing Constructive Work

A perusal of the weekly press bulletins by Fletcher Hamilton, the state mineralogist of California, will show that a large amount of constructive work is being conducted by the California State Mining Bureau. The press bulletin is carefully prepared, and is proof that Mr. Hamilton is not the type of scientist who allows the results of his work to remain buried, thereby greatly impairing his usefulness to the public.



### COAL PRODUCTION OF U. S. CONTINUES TO DECLINE

The ratio of tonnage produced to full-time output continued to decline during the week ended August 11. Mines representing more than one-third of the output of the country produced 71.8 per cent of their combined full-time capacity as limited by the present labor force. The index not only fell below the level of the preceding week (73.0), but reached the lowest point attained since June 1 when the system of weekly reports was begun. Iowa, Illinois, Ohio, Kansas, and Missouri, declined; Alabama, Southwestern Virginia, and Western Pennsylvania held their own; while Eastern Kentucky and Tennessee recovered to some extent from the depression of the week before.—*From the Geological Survey's Weekly Coal Statement.*

### ANTHRACITE PRODUCTION SHOWS DECREASE IN JULY

The shipments of anthracite for July, as reported to the Anthracite Bureau of Information, at Wilkes-Barre, amounted to 6,724,252 tons. On account of the Independence Day holiday which reduced the working time in the mines by about a day and a half; of one extra Sunday, which reduced the working time another day; of several "button strikes" which followed the observance of "Button Day" on the 26th of the month, and of a reduction in the number of men due to enlistment in the military forces, the shipments show a decrease of 324,785 tons as compared with the preceding month. In spite of this decrease the shipments in July of this year exhibit a gain over the corresponding month of 1916 of 1,291,374 tons, and exceeded the previous high July record made in 1912 by 439,099 tons. Button strikes which occurred at seven of the larger collieries and which involved a total of 5,542 men for an average of two and one-third days, were alone responsible for a loss of about 25,000 tons of production.

#### Number of Coal Operators

The number of individuals and companies which are operating coal mines in the United States are shown by United States Geological Survey records, which are kept within a few days of date. The number of such operators totals 19,279, distributed as follows:

Alabama, 149; Alaska, 13; Arkansas, 141; California, 5; Colorado, 212; Georgia, 2; Idaho, 4; Illinois, 1,346; Indiana, 849; Iowa, 412; Kansas, 388; Kentucky, 4,039; Maryland, 202; Michigan, 15; Missouri, 1,433; Montana, 190; Nevada, 2; New Mexico, 32; North Carolina, 3; North Dakota, 392; Ohio, 2,584; Oklahoma, 237; Oregon, 28; Pennsylvania (bituminous) 2,363, (anthracite) 172; South Dakota, 21; Tennessee, 181; Texas, 44; Utah, 58; Virginia, 118; Washington, 55; West Virginia, 3,486; Wyoming, 103.

### SHIPMENTS OF COAL SHOW A DECREASE OF FOUR PER CENT

The record of cars of coal loaded on roads representing more than half the shipments of bituminous coal shows a drop of 4 per cent in the week ended August 18 compared with the week ended August 11, but an increase over the low record of August 4. The general downward tendency in the rate of production that has been manifested since the middle of July was resumed, after a slight gain in the week ended August 11, in all districts shown except Illinois and Indiana. The slump in Pennsylvania and Ohio is particularly to be noted. A strike in the Southern Appalachians decreased shipments from eastern Kentucky and eastern Tennessee nearly 20 per cent.—*From the Geological Survey's Weekly Coal Report.*

### PERSONALS

Dr. Henry Mace Payne has closed his office in New York to become assistant to the president of the Bertha Coal Company and affiliated companies, with offices at 1203 Chamber of Commerce Building, Pittsburgh, Pa.

Falcon Joslin, of Seattle, Wash., and Alaska, who has been spending several months in New York and Washington, left late in August for an extended trip in Alaska.

William Wearne, superintendent of the Inland Steel Company, at Crosby, Minn., has received a commission as captain in the Engineer Reserve Corps. Mr. Wearne recently became a member of the American Mining Congress.

W. A. Williams, formerly chief petroleum technologist of the Bureau of Mines, made an extended visit to Washington recently.

C. E. Julihn has returned to Washington after making examinations of the pyrrhotite deposits in Maine. He also visited the nickel mines at Sudbury, Ontario. His next assignment covers an inspection of the nickel-cobalt properties at La Motte and Fredericktown, Mo.

James H. Pershing, George L. Nye, John H. Fry and M. P. Tallmadge announce that they have formed a partnership for the general practice of law, under the firm name of Pershing, Nye, Fry & Tallmadge, Suite 519, Equitable Building, Denver, Colo. Mr. Nye is an active member of the American Mining Congress.

E. W. Parker, of the Anthracite Bureau of Information, Wilkes-Barre, Pa., when in Washington recently was a caller at the offices of the American Mining Congress.

# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## ANNOUNCEMENT

As has been previously announced, the American Mining Congress will not hold a convention during the present year. Instead of its twentieth annual convention, it has been decided to issue a special Twentieth Anniversary number of THE MINING CONGRESS JOURNAL, in which it will be undertaken to concentrate the best thought of the mining industry upon the various questions which would naturally have been discussed had a convention been held. It is hoped that condensed statements, giving the views of many thousands of men interested in the mining industry, may be assembled and that the best thought upon its varied problems may be better secured by this plan than through a convention.

Engineering problems are not greatly varied by the present disturbances. Economic and legislative conditions will be substantially altered, and because of these changes a greater need of foresight and preconsideration is necessary.

Contributions will be confined to matters pertaining to the economics of the operation of mines and the distribution and exchange of mining products.

It is believed that by this plan a better consensus of the views of the mining men of the nation can be assembled and a better purpose served without interfering with the efforts which every member of the Mining Congress desires to make in behalf of his country.

Each of our members is requested to submit to the secretary such questions as in his opinion should be considered in

order that this general plan may be made most effective.

## ANNUAL ASSESSMENT BILL

The passage by the House of Representatives of S. J. Res. 78 as amended by the Mining Committee of the House is an evidence of what a real effective congressman can accomplish as well as a tribute to the standing in the House of Representatives gained by Congressman Edward T. Taylor of Colorado.

There has always been a difference of opinion as to the advisability in normal times of setting aside the law requiring \$100 worth of development work to be done upon each mining claim annually. Some few have questioned whether this should have been done this year but the preponderance of good judgment favored the setting aside of the law as a war measure to the end that the labor required for this work should this year be applied directly to the production of those minerals so greatly needed by the industries of the nation.

Had there been no question as to the advisability of this legislation it would have been a difficult thing to secure its enactment during the present special session of Congress when its whole attention is centered on necessary war legislation. To secure the passage of a bill regarded by many eastern men as of little importance is a great tribute to the standing and personal effectiveness of Senator Shafroth, Congressman Taylor, and other Western Senators and Representatives, who are entitled to the plaudits of the West for service in this behalf.



## LOYALTY AND THE CLOSED SHOP

The strike of the employes in the navy yards at San Francisco and elsewhere is a matter of very serious importance. The service of the men employed in these plants is just as important to the country as the service of the soldiers in the ranks; in fact, it may be even more important. In fact, the equipment required is absolutely essential to the complete fighting machine. The soldiers in the ranks get a compensation of \$30 a month and expenses; the men in the shipyards receive \$4 and are asking that this amount shall be increased to \$6 a day. The soldier is forced to leave his home and family, to give up his job, to face the enemy's bullets, to suffer the deprivations of army life, and is required to work for less than half of the wages received by the shipyard employes. If this soldier shall desert his post, he is court-martialed and shot. The desertion of an employe of the Government engaged in the production of war material is just as unpatriotic and disloyal as the desertion of a soldier in the ranks, and there seems to be no substantial reason why he should be treated differently.

When the national honor and safety are at stake and the public interest requires production without reference to cost, then it would seem to be little less than treason for those who are producing the food, munitions and supplies for our army and the ships, without which the army and its supplies cannot be transported to the seat of war, shall be stopped while the question of wages is being adjusted. Republican government will be a failure unless in time of national stress the rights of individual liberty are cheerfully surrendered to the extent that autocratic control is necessary for the protection of the nation's existence. Profuse declarations of loyalty to the Government come with poor grace from the men who lay down their tools and desert their posts during a time of war, and with poorer grace still from the great labor leaders who are base enough to secretly commend a strike while publicly deploring the cessation of work and who advise their followers to take advan-

tage of the present situation to insist upon the complete recognition of the union and the closed shop. Not long ago work upon the cantonments which were being erected for the soldiers' training camps was stopped abruptly and work was only permitted to proceed under the closed-shop principle, where none but union men were to be employed. To demand wages commensurate with the cost of living and the service rendered is legitimate; to demand the closed shop as a paramount issue at this time is not loyal and should not be tolerated. It is high time that the drastic authority which has been placed with the administration shall be exercised without discrimination against both capital and labor.

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## GOVERNMENT CONTROL OF BUSINESS COMBINATIONS

In the early history of the United States each business agency was allowed to pursue its own course without limitation on the part of the Government. Then it became apparent that large business organizations not only had power but actually did infringe upon the rights of individuals and were able to throttle competition by driving independent operations from the field, secure for themselves a monopoly of production, and thus create unbearable burdens upon the people as a whole. To meet this situation the Sherman anti-trust law was passed, prohibiting business combinations from restricting production or controlling prices. It required many years for the courts to so construe this law as to make it as effective as it was designed to be. The execution of this law in some respects was beneficial to the public; in other respects it put a limitation upon that cooperation which made for the cheapest production in the common interest. The Federal Trade Commission was designed by its early advocates to provide governmental regulation for such combinations as could serve the public if properly conducted, with power to restrict the operations of these organizations whenever the public good required it. It was believed that through

such an organization the so-called "twilight zone," representing the middle ground between monopoly upon the one side and absolute disorganization upon the other, could be so controlled as to secure the highest efficiency from all productive units and create that ideal condition in which the workman shall receive a proper wage, the operator shall receive a fair profit, and the public shall have its product at the most reasonable price consistent with the proper and orderly operation of the business enterprise. In the enactment of the Federal Trade Commission law Congress did not see fit to give that body these powers, and contented itself by creating full authority for investigation and publicity, but no power to approve a combination, no matter how beneficial to the public its operation might promise to be. THE MINING CONGRESS JOURNAL believes that future conditions call for a further consideration of the importance of this character of legislation. Perhaps no industry needs such legislation more than does the bituminous coal industry.

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### THE FUEL ADMINISTRATION

A disposition to criticise the coal administration at Washington should be tempered by a conception of the stupendous magnitude of the task undertaken. The control of a business with an annual production valued at from three-quarters of a billion to a billion dollars, a business with an investment of about ten billions of dollars, a business which has been carried on by more than five thousand distinct and separate enterprises, each operating under its own special conditions, both as to the character of its product, the thickness of the seams and depth of workings, the efficiency of its equipment, its proximity to transportation facilities, and its relation to its ultimate market, and the ever-present wage question—is no small task for a well-trained and competent organization. There can be no doubt of the tense desire of the coal administrator to so handle this situation as to furnish ample fuel for the nation's needs at the lowest price which is consistent with proper operat-

ing conditions and with a reasonable profit to the operator. There is little doubt that in due course of time these things may be accomplished. It is not surprising that the effort to handle this stupendous enterprise by a hurriedly created organization purposely formed of men without practical knowledge of the business has, temporarily at least, interfered with the processes of production and distribution, which at this time should go forward with the greatest celerity. Surely those who are disposed to criticise should take into consideration the difficulties of the task undertaken and not be too impatient with the personnel of the organization. It is frequently urged that the coal administrator should have been a man thoroughly familiar with the business of coal production, in view of the fact that so little time in which one unacquainted with the details of the coal business had to master its intricacies and prepare himself fairly for the task in hand. Granting this, it is also true that the public at large would have criticised much more severely the appointment of a coal operator to this responsibility. Perhaps they should not, but the fact remains that the public, as a whole, has had no comprehension of the economic conditions underlying the coal production and has been led to believe by press reports and otherwise that coal operators are undeserving of any confidence or consideration. Whatever the condition, it is the patriotic duty of every coal operator to increase his production to the highest possible limit and to coordinate his efforts with the coal administration in such manner as will best meet the requirements of the country.

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### THE COAL SUPPLY

There seems to be no reason to change the statement of THE MINING CONGRESS JOURNAL of September that in order to meet probable coal demands abnormal production and abnormal distribution must be immediately begun. A month has passed since that time, and instead of abnormal production there has been a very considerable decrease of normal



production. Coal men from various parts of the country have been endeavoring to secure from the Fuel Administrator some assurance that the mines under their control would not be forced to close or operate at a loss. We assume that Dr. Garfield has been doing his best to relieve the situation. We assume also the fact that under any circumstances it would be utterly impossible for one with no practical knowledge of the coal business to handle effectively so great a task as has been set for the coal administration. It would be impossible for any single practical coal man, no matter how efficient in his own field of operation, to be able to fix fair prices and direct the operation of different coal mining districts, each with its own peculiar problems and operating under cost conditions entirely different. To create an organization able to direct such stupendous operations carried on in different sections of the country under cost conditions varying from 100 to 300 per cent is the work of years and not of days. Under these circumstances, impractical requirements should not be permitted to interfere with production.

THE MINING CONGRESS JOURNAL stated in its September issue that there was a strong probability of a shortage of 50,000,000 tons of coal during the coming winter. There seems every reason now to increase this estimate. The failure to act promptly will more than anything else be responsible for this increased shortage of production. It is not that the coal administrator did not mean to do the very best thing in the circumstances, but it is because of the fact that the direction of the coal business was not put in the hands of men representing the various districts who understand the situation and who could have stimulated production from the beginning. We earnestly hope that our prediction will prove to be without foundation, and that by some process the needs of the country for fuel will be met.

#### RESPONSIBILITY FOR

#### COAL SHORTAGE

The great business of furnishing coal to the consumers of the nation is divided

into three distinct parts—production, transportation, and the final or retail distribution. It is the business of the coal operator—and every natural motive urges his best effort in that behalf—to produce coal as economically and as efficiently as can be done with due regard to the proper conservation of the nation's fuel supply, the payment of a fair wage to the miners, and the creation of such safety and living conditions as are due to every American workman.

Having produced this coal and loaded it in the cars at the pit mouth, the responsibility of the producer is at an end. At this point transportation responsibilities begin, and in order that there shall be an economical and efficient distribution of this coal the necessity devolves upon the transportation company to furnish cars as and when needed and to start these cars upon their way to their final destination promptly after being filled. There are no facilities at the mine for the storage of coal, and under existing circumstances none are reasonably possible. It is, therefore, seen that unless the railroad company furnishes cars as they may be needed for loading, the operator must await the time when cars do arrive. Without cars to transport the coal away from the pit mouth, there can be no production.

The third responsibility rests in the final distribution of coal after it has been turned over by the railroad to its consignee. Here there must be some storage facilities, because of the fact that, with the exception of the large manufacturing and railroad consumers, domestic demands mature largely during the winter months, and it is impossible for the railroad, under present conditions, to transport the whole winter's coal during the winter months. It is equally impossible for the coal operators to produce coal for the whole year's use during the winter months. The lack of storage facilities and fluctuation in prices frequently prevent the dealer from laying in during the summer months that supply of coal which is required to meet the winter demand. This is manifest by the small number of working days in the bituminous mines

of the country, averaging possibly a little more than two hundred days per year. The problem which faces the bituminous coal industry and the country as a whole is the coordination of productive forces, to the end that steady employment may be given to the miners and that the equipment of the railroads may be sufficient to properly deliver this coal to the ultimate consumer. In anticipation of very bitter criticism which must be leveled against someone because of a shortage of coal during the coming months, it is well to point out that the coal producer's responsibility ends at the pit mouth; that he cannot produce coal until he has orders for it; that even with orders granted he cannot produce coal unless the railroad carries it away, and, therefore, the blame for coal shortage must necessarily rest either with the railroad which fails to transport or with that public agency which, by holding out to the dealers in coal that a better price will be available at a later date, prevents the purchase of bituminous coal at a time when it is possible for the producer to deliver it at the pit mouth and the railroad to transport it to its destination. The price-fixing experiment of the recent past will be primarily responsible for the failure of dealers to buy at a time when delivery could be made. Every interference with the orderly conduct of business through those channels which the business judgment of many brilliant men during the course of many years has developed is bound to bring suffering to some one. It is unfortunately true that the public mind is so educated upon the coal question that it will blame the operator for the shortage instead of putting the blame where it should be—with that agency which disturbs the public mind as to future coal prices.

#### THE LEVER BILL

##### AND COAL PRICES

Any suggestion that the rules laid down by the administration should not be implicitly followed would seem to be out of place. If, however, a ruling of the administration or any of its agencies is plainly calculated to bring disaster, it

would then seem to be the duty of those who appreciate the situation to question the authorities and point out the reasons why the ruling should not be enforced. Every fair construction which can be placed upon the Lever food bill indicates an intention to leave a fair profit to the producer under all circumstances. While the President is authorized to fix prices, the intent of the bill as it relates to coal is that this shall be done after the Federal Trade Commission has completed an inquiry as to the cost of production, and the President is authorized to fix the price at which such commodity shall be sold by producers in accordance with the following restrictions: "In fixing maximum prices for producers the commission will allow the cost of production, including the expense of operation, maintenance, and depreciation, and shall add thereto a just and reasonable profit." It is plainly the intent of the law that no price shall be fixed so low as to leave the producer without a fair profit. The tentative price fixed by the President is believed to be much below cost of production in certain sections of the country. Many coal mines are slackening in production because of the fear of being forced to sell coal at less than the cost of production. THE MINING CONGRESS JOURNAL believes this fear to be unfounded. It believes that the Fuel Administrator will in the end permit every operator to make a fair profit. It therefore urges every coal producer to speed up his production to the highest limit and to sell his coal at the lowest price possible which will leave him the fair profit which the statute intended him to have. The purpose of the food bill is most beneficent, but its administration does not intend and must not be permitted to make impossible this beneficent purpose. It is imperative that the people shall be supplied with food and fuel. It is important that these supplies shall be furnished to them at the lowest possible cost. To the extent that the bill or its administration hampers production, it has failed of its purpose. It seems probable that the sale of coal at a price which leaves a fair profit to the producer will



not be counted a violation of the law, and that the courts will be ready to interfere to give every producer a fair profit who performs what seems to be his highest patriotic duty, viz.: to produce the very largest amount of coal possible. If this were not the intent of the law, the provision would not have been included that "any person not satisfied with the price fixed may receive therefor 75 per cent of the fixed price and bring suit against the Government to recover such balance as in addition to the 75 per cent received will make a price covering costs and a fair profit." This provision clearly indicates that the producer under all circumstances is entitled to a fair profit, and in case of any difference of belief as to what constitutes a fair profit it shall be left to the courts for determination. This is the time for a perfect cooperation between producer and distributor and the consuming public. Every patriotic reason impels you, Mr. Operator, to increase your production to the highest possible limit. Every principle of fairness, every reasonable construction of the law will justify you in selling your coal at a fair profit and of refusing to sell at a loss.

## COAL COOPERATION

### AFTER THE WAR

For five years prior to the beginning of war conditions, the bituminous coal operators of this country had facilities for the production of approximately 50 per cent more coal than the market could possibly consume. The Sherman law absolutely forbade any combination through which these facilities of production might be lessened and the immense cost of their maintenance applied to other productive lines of industry. With three tons of coal available for a market which could consume but two tons, in a business which required continuous operation to avoid loss and maximum production to keep down the overhead charges, ideal conditions for cut-throat competition were present. The bituminous coal industry so took advantage of this opportunity that for five years the average selling price at the mine of the bitumi-

nous coal of the country was \$1.11 per ton, while the cost of labor and supplies required in its production approximated 96 cents per ton. Fifteen cents per ton was the amount available to pay for the coal in the ground, for the cost of mine development, for mining equipment, for interest upon the investment, for selling costs, and for the continuous risk of an accident which might at any time wipe out the total capital invested. The best estimates which have been made demonstrate that this coal, as a whole, was sold at a loss to the producer of approximately 10 cents per ton.

During the recent past the facilities for coal production have been very largely increased, and it is more than probable that when the war is over coal mines of the country will be able to produce from 75 to 100 per cent more coal than the markets will be able to consume. If this prediction is anything like correct, there will be much greater need of cooperation between coal producers after the war is over than ever has existed in the past. It may be said that this is no time for the consideration of subjects of this kind, but in view of the fact that years are required to educate and concentrate the public thought upon any important issue it would seem time to begin the discussion of this subject in order that this machinery may be available when the great stress of changing conditions, after the war, is over. A more perfect cooperation and coordination of the forces will be necessary to meet the changing conditions, which are inevitable. There are few persons interested in trade today who are not anxiously speculating upon the condition in which trade will find itself tomorrow. THE MINING CONGRESS JOURNAL will welcome contributions discussing this subject.

## PRICE-FIXING

The order of the President of the United States fixing the price of coal for the various districts of the country is an order intended to stand until such time as it might be shown that the prices so fixed were unjust or fail to leave a rea-

sonable profit to the producer. These tentative prices were ordered, but were to be based upon cost of production plus a reasonable profit, to be fixed after the Federal Trade Commission shall determine the costs. No definite price can be permanently fixed until investigation is made by the Federal Trade Commission for each particular mine, concerning which a prima facie case is made if the case so fixed does not leave a reasonable profit. The Constitution of the United States provides that no person may be deprived of his property except by due process of law. Any rule which prevents a coal mine which represents a large investment from operating at a profit is a rule which does deprive a citizen of his right to property without due process of law. The food bill does not contemplate that its administration shall accomplish this violation of the national Constitution.

## INDUSTRIAL DISPUTES

### INVESTIGATION

In every industrial dispute there are three parties in interest—the employer, the employe, and the public. In every industrial enterprise in which the public interest is directly involved the interest of the public should be paramount to the interest of either of the contending parties. The interest of the public is best served by the continuous operation of productive forces, by the steady earning power of both labor and capital.

The Colorado industrial disputes investigation act furnishes a method under which no strike can be legally declared for a period of thirty days, during which it becomes the duty of the industrial commission to investigate the situation and make public its finding as to the justice of the claims in dispute.

President Wilson recommended the enactment of a similar law by Congress, but the Congress which made itself servile in executing the command of President Wilson and the labor leaders for the enactment of the Adamson eight-hour law has not given serious consideration to the demand of President Wilson in opposition to the wish of Mr.

Gompers. Representatives of the American Federation of Labor spent some months in Colorado last year seeking to bring about the repeal of the Colorado industrial disputes investigation act. Failing in this, every effort has since been made by organized labor to obstruct and defeat the operation of the law. Whether in the end this effort shall succeed or whether the law shall become a model for the legislatures of other States is a very important public question.

## THE FARMER AND THE MINER

Truly the farmer has come into his own. There was a time when the life of the farmer was one of continual drudgery, economy, and privation. His work-day began at daylight and ended some time after dark. The mortgage upon his farm usually remained thereon until it was foreclosed by the owner. During those dreary days for the farmer he was given scant consideration in the making of laws which had to do with his business. Possibly the change in this regard has had much to do with the change in farming conditions. The special regard for the farmer held by most legislators is plainly evident in the enactment of the food and fuel bill and its administration. A minimum price is placed upon wheat, a maximum price upon coal. The farmer is guaranteed a large profit upon wheat and is at liberty to get as much more as he can. The coal operator is restricted to a minimum profit upon the average cost of production and prohibited from getting anything beyond that. The more expensively operated mine must sell at the same price as the mine which has the power to produce cheaply. The high cost coal is refused a market, and not only this, but the operator is prohibited from hoarding this coal until such time as he can sell it at a profit. The law prohibits the storing, acquiring or holding of any article of food or fuel for the purpose of limiting the supply thereof to the public or affecting the market price, but specifically excepts the farmer, gardener, and farmers' and fruit growers'



associations and exchanges. Such discriminations are unwise and unfair, and would not be permitted to prevail if the mining industry were better organized.

## THE REPUBLIC AS

### A WAR MACHINE

The United States has always been a country of remarkable productivity and equipped to meet a greatly increased demand, but to meet this demand and at the same time to withdraw from active work a million of its young and able-bodied men has created more or less disturbance in the usual routine of business affairs. Notwithstanding the stress of the present situation, it seems wise that future industrial conditions should not be lost sight of as the present rapid changes are being made. For many years this country has witnessed a tendency toward centralization of powers in the Federal Government and a trend toward municipal ownership and municipal control of business affairs. The present war situation has intensified to a marked degree the tendency toward a more autocratic control in governmental affairs and a disposition to regulate business operations. The supreme test of a republican government is that it shall be able during times of national stress to secure unified action of its constituent parts in a great machine under absolute autocratic control. For a time the government ceases to be democratic, in that the liberty of the individual must be ruthlessly set aside wherever and whenever this may be required for the common good. This republic is now demonstrating most effectively its power to centralize and unify its resources. Will it be equally able to return to the conditions of individual liberty in the times to come?

H. F. Nash, D. W. Brown, George Harris, W. H. Huff, George Kimball, Alex. McNeill and W. W. Curtis comprise the delegation representing the coal interests of the State of Colorado, who have been spending several weeks at the Capital in behalf of their industry.

## PRESIDENT FIXES COPPER PRICE AT 23.5 CENTS

### Producers of the Red Metal Cooperate Patriotically in the Extended Investigation Into Cost of Production

After many weeks of discussion and negotiation, the President has named 23.5 cents as the price of copper, f. o. b. New York. This price is 7 cents higher than that named by the operators themselves, which was applied to 48,000,000 pounds of the red metal which were furnished for Government requirements. The extent of their generosity to the Government on this occasion stands revealed, since the President's price was based on a careful inquiry into costs by the Federal Trade Commission.

The spirit of the copper producers throughout the entire negotiation is commended on every hand in Government circles. The Federal Trade Commission is warm in its praise of the cordial cooperation which has been accorded in one of the most difficult tasks which that organization has been called upon to undertake. Not only did the operators facilitate the work of the Trade Commission's accountants by laying before them all of their records, but they aided very materially by detailing many of their best men to assist in the work. There was no case where returns were not made to the Trade Commission's various inquiries.

At the War Industries Board and at the Council of National Defense the same character of commendation is forthcoming. Officials generally are unanimous in stating that the copper producers have shown the highest type of patriotism throughout the entire negotiations.

The President's statement, in full, is as follows:

"After investigation by the Federal Trade Commission as to the cost of producing copper, the President has approved an agreement made by the War Industries Board with the copper producers, fixing a price of 23½ cents per pound, f. o. b. New York, subject to revision after four months. Three important conditions were imposed by the board—first, that the producers would not reduce the wages now being paid; second, that the operators would sell to the Allies and to the public copper at the same price paid by the Government and take the necessary measures under the direction of the War Industries Board for the distribution of the copper, to prevent it from falling into the hands of speculators, who would increase the price to the public; and, third, that the operators pledge themselves to exert every effort necessary to keep up the production of copper to the maximum of the past so long as the war lasts.

"The War Industries Board felt that the maintenance of the largest production should

be assured and that a reduction in wages should be avoided. The stipulation that present wages shall not be reduced compels the maintenance of the highest wages ever paid in the industry, which without such stipulation would, with the reduction made in the price of copper, be reduced under the sliding scale so long in effect in the copper mines. Within this year copper has sold as high as 36 cents per pound, and the market price would now be higher than it is had it not been well known for some weeks that the Government would fix the price.

"The principal copper producers throughout the country have evinced an admirable spirit, and for weeks have promptly supplied every request of the Government for copper without awaiting decision as to price and agreeing to accept the price which the board should ultimately fix. The proper departments of the Government will be asked to take over the mines and plants of any producers who fail to conform to the arrangement and price, if any such there should be."

#### ATTORNEY GENERAL ANSWERS QUESTIONS REGARDING SECTION THREE OF FOOD CONTROL ACT

With the creation of the War Industries Board which is the clearing house between the committees of the Council of National Defense and the government departments, it is believed that the requirements of section 3 of the Food Control Act have been met. The provisions of this section caused much uneasiness among members of the defense council committees and a number of tentative resignations were submitted. Most of the men serving on these committees were directly interested in raw materials and commodities which the Government is purchasing. The demand for a thorough understanding of the matter was such that a series of questions were submitted to the Attorney General.

The questions submitted to the Attorney General and the answers to them are as follows:

Question 1. Is there compliance with the Act where such interested person is a member of the War Industries Board, and the Board makes a recommendation to a contracting department or contracting officer with regard to such contract or order, and the interested person does not participate in making such recommendation?

Answer. No, not unless such interested person makes the disclosure required by the Act. That he did not actually participate in the recommendation does not, in my opinion, relieve him of the duty of making the specified disclosure.

Q. 2. Is there compliance with the Act where such interested person is a member of the Purchasing Commission of the War Industries Board, and he makes a recommendation concerning such contract or order to the War

Industries Board, making a full disclosure of his interest?

A. Yes.

Q. 3. Is there compliance with the Act where such interested person is a member of the Purchasing Commission of the War Industries Board, and makes a recommendation directly to a contracting officer or department concerning such contract or order, making full disclosure of his interest?

A. Yes; although in view of the narrow margin of difference which might exist in a given case between *recommending*, on the one hand, and *inducing, soliciting, or awarding*, on the other, it would be well as a practical matter for such persons to exercise great caution as to the kind of *recommendation* they shall make to a contracting officer.

Q. 4. Is there compliance with the Act where such interested person, being a member of the sub-committee of the Council of National Defense, makes, or participates in making, a recommendation concerning a contract or order to the War Industries Board, or to a council, board or commission of the United States or any member thereof, but not to a contracting department or officer, and makes a full disclosure of his interest?

A. Unless I misunderstand it, I can see no difference in principle between this question and Question 2, and, therefore, answer yes.

Q. 5. Is there compliance with the Act where such interested person is a member of the sub-committee and the sub-committee makes a recommendation concerning a contract to the War Industries Board, or to a council, board, or commission of the United States or any member thereof, but not to a contracting department or officer, and such sub-committee makes a full disclosure of the interest of the interested person?

A. No. The law requires the interested person himself to disclose his interest to the council, board, commission, or member or subordinate thereof to whom the recommendation is addressed.

Q. 6. Does the provision "Nor shall he (such interested person) participate in the awarding of such contract or giving such order" have the effect of nullifying the right to make recommendations to any council, board, or commission, when accompanied by a full and complete disclosure of interest?

A. In my opinion, no. There is an obvious distinction between actually *awarding* a contract or *giving* an order and *recommending* that a contract be made or an order given.

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James R. Henderson, of Bisbee, Ariz., president of the Citizens' Protective League, together with Dr. Nelson Charles Bledsoe, C. K. Jacobson, J. C. Ryan, C. M. McKean and J. G. Berlindis, were recently in Washington. While here they presented information concerning the Arizona labor situation to the proper authorities.



## **PRESIDENT'S COAL PRICES SHOWN TO BE TOO LOW**

### **Return to Peabody Schedule Is Anticipated —Dr. Garfield Makes Important Announcements**

That the President's coal prices are too low was clearly demonstrated during the past month. It is believed that Dr. H. A. Garfield, the Fuel Administrator, has been convinced of the fact, and it will not be surprising to those who are closely in touch with the situation if recourse is had to the Peabody schedule. While the new schedule is expected to be greatly subdivided so as to take care of varying costs in different districts, it is the consensus of opinion among operators who have come to Washington that the industry requires a schedule which in the aggregate must be as high as that one agreed upon under the direction of Francis S. Peabody, chairman of the committee on coal production.

During the month hundreds of operators have journeyed to Washington to explain to Dr. Garfield and the members of his staff the situation they have been called upon to meet. Great masses of data referring to costs have been turned over to the Federal Trade Commission, all of which has tended to prove that the President's schedule would curtail a large number of operations, and, most of all, would not stimulate production.

Many important announcements have been issued by the Fuel Administration, which are covered in their entirety in this article. Most of the work of perfecting the machinery of the Fuel Administration in the individual States has been completed.

There is still some talk of pooling the entire coal output of the country, but it is believed that Dr. Garfield is opposed to the plan.

The investigation by the Federal Trade Commission of producing costs throughout the country was less than one-half completed. Therefore, when it became necessary for the commission to furnish the President with cost figures upon which to predicate his proclamation statistical figures from the archives of the Geological Surveys had to be relied upon. Mines producing the high-cost coal, especially prepared, were averaged in with mines producing only unprepared low-grade mine-run coal for railroad consumption exclusively and at low cost. This process resulted in authorizing many mines to charge more for their product, or portions of their product, than they had at any time gotten in the open market. It operated to cut the price on the product of many mines below the actual cost of production.

The President apparently recognized that these discrepancies would develop, as he very clearly stated in his original proclamation that the prices announced were provisional and tentative only and subject to revision. He

clearly stated that it was his intent to leave each operator not only a fair and reasonable but a "generous" margin.

Operators from the various States, Territories and districts which were severely crippled and upset by the President's price-list thereupon proceeded to compile their cost statements and to hasten to Washington for relief, with full confidence that it would be forthcoming upon presentation of correct facts. Upon their arrival at Washington, Dr. Garfield, who had been appointed coal administrator, was still engaged in determining the minimum price the farmers of the country should receive for the 1917 wheat crop. Fully a week elapsed after his appointment before he could begin to assume the duties of coal administrator. Incidentally, the minimum price of wheat was fixed at \$2.20 per bushel, which is at least two and one-half times the normal price. Operators were told that under the law they should present their cost statements and other data to the Federal Trade Commission, and this process has been followed. It is apparent that the Federal Trade Commission has not anticipated or organized itself for the performance of such enormous tasks in such a short period of time. There are few problems in accounting more difficult and complex than determining the cost of producing a ton of coal, and when the last figure is obtained it is at best an estimate. To the best of its ability the Federal Trade Commission is now laboriously struggling through the masses of figures operators from the various States have submitted with petitions for immediate relief. Each State has special conditions, special grades and qualities, special methods of sizing and preparing their product to meet the special needs of the public in the territory they serve. Many mines have large portions of their output contracted at prices much higher than the President fixed, and these contracts, under the Lever act, exempted from regulation. Other mines have but small fractions of their output under contract, and in many cases mines have contracted large portions of their output to railroads at practically cost.

Administrator Garfield has been busily engaged forming machinery for the purpose of handling the most difficult task assigned to him. With the approval of the President, he has chosen John P. White, president of the United Mine Workers of America, as one of his advisers, and Mr. Rembrandt Peale, of New York, operating mines in Pennsylvania and a man of long experience in the coal mining and selling business, who commands the confidence of the operators, who express general gratification at his appointment, as his operator adviser; Mr. Edward W. Parker, formerly statistician for the Geological Survey and now statistician for the anthracite operators in Pennsylvania, has been appointed his adviser in respect to matters pertaining to anthracite coal; Mr. L. A. Snead has been appointed commissioner in charge of the de-



partment pertaining to the fuel requirements of the Government. Dr. Garfield's chief personal assistant is Mr. H. D. Nims, an attorney-at-law of New York City and the author of a book entitled "Unfair Trade Practices."

Up to the present time Administrator Garfield has employed himself principally in the organization of his department. The chairmen of the State councils of defense have been asked to recommend a fair and impartial man for appointment as State administrator. In addition to the State administrator, the national administrator will appoint a State advisory committee, and the State administrator shall appoint a committee for each county and a committee for each town with a population in excess of 2,500, and this State organization shall investigate the supply of coal available in each State, prospective requirements, the cost of handling coal at retail, and shall determine the maximum gross margin to be charged by the retailers in each community.

It is the opinion of coal operators familiar with the situation that if regulation of retail distribution was inevitable and necessary this method of regulation is the best that could have been chosen, for the reason that conditions in different communities and in different parts of the country vary vastly, and the State and county committees will be in position to take cognizance of these local conditions and to provide such regulation as will fit, and in addition take the pressure of such an enormous volume of detail off from the shoulders of the national administrator.

Some thoughts in connection with the coal situation which are being expressed in Washington are as follows:

It would be as practical to average the cost of silk, satin, worsted and muslin and to arrive at a common selling price as to include several different grades and qualities of coal with separate costs in a common average selling price. It is clear to the most inexperienced observer that if the price of silk, satin, worsted and muslin is fixed at an average figure that the selling price for the silk would be less than cost and that the selling price of muslin would preclude its sale, at least so long as the higher grade materials were available at the same figure. In like manner, each grade or size of coal from the same mine has a separate and distinct value and use. The problem is increasingly complex, and regulation is in no wise comparable to the fixing of the price of wheat or cotton. It was stated by the newspapers that the price of steel and steel products would also be regulated, but later the newspapers stated that steel products will not be regulated because of the wide variation in costs of production. There is no greater variation in the cost of producing steel and iron at different plants than in the cost of producing coal at different mines.

The coal industry, as a result of recent developments, comprehends the importance of standardizing cost accounting and of perfect-

ing some form of national organization for the study of the marketing as well as the producing problems of the industry and for the purpose of mobilizing the resources of the industry for cooperation with the Government along sound and practical lines. If such is the ultimate outcome of that which is now regarded as nothing short of a calamity to the industry, and which comes as a sequence to the discouraging conditions under which the bituminous industry has operated for many years, it may finally contribute to the permanent uplift of the industry. The coal operators feel that severe regulation of the coal industry cannot but disorganize and slow down the entire industrial situation. They are unable to see wherein it will help to win the war for the coal operator to be required to reduce the price of coal from 50 cents to \$1 per ton to steel plants, by-product coke plants and others, all of which industries are enjoying unparalleled prosperity and making vastly larger profits than any phase of the coal industry. This in connection with the provision in the same bill specifying minimum prices on agricultural products, which are already bringing comparatively higher prices than coal has anywhere attained, clearly shows that the coal industry is not being accorded the same consideration or treatment that all other lines of industry and agriculture are receiving. Those best informed feel that this is the result of the disorganization of the industry and of its failure to provide an adequate agency to compile facts and information pertaining to the industry and to adequately present these facts to the different departments of the government and the public.

Dr. Garfield's first statement, issued September 5, reads as follows:

"The task of the Fuel Administration is to secure the largest possible production of fuel at prices just to the producer and reasonable to the consumer.

"The coal situation is briefly this: The demand has vastly increased. It comes from factories and railroads, not from domestic consumers, whose use is normal. Factories and railroads must be kept going and households must be kept warm and well fed if the country is to be fit for its great task. We dare not forget that we are at war, and that the cause we have at heart depends in large measure upon abundant production and wide distribution of coal. We must produce all we can and distribute according to need. In addition to meeting the situation at home, we must supply coal to our army and navy abroad and consider the needs of our neighbors, especially Canada, Cuba and South America, and some of the allies whose supply is inadequate.

"It is the purpose of the Fuel Administration to encourage production, to utilize, as far as possible, all existing agencies, to seek the advice of experts and the cooperation of operators and miners, of industrial and domestic consumers, and of all who perform



a useful service in the production and distribution of coal.

"Until further direction, the following rulings will be observed:

"1. The President's order fixing prices became effective for bituminous coal Tuesday evening, August 21, 1917; for anthracite coal, Saturday, September 1, 1917. The President's order includes export and bunker coal.

"2. The prices fixed are provisional. They will stand unless changed by order of the President for good cause shown. The Fuel Administration will examine all applications for revision of prices, accompanied by cost statements, presented in writing. These statements should be verified and cover at least the years 1915, 1916, and 1917 to date.

"If further explanation is needed, the Fuel Administration will ask complainants to appear in person.

"It is not proposed to require efficiently operated mines to produce coal at a loss, but the burden rests upon applicants to show that the prices fixed in particular cases are unfair.

"3. It will greatly expedite the work of the Fuel Administration if associations, whether of operators, miners or industries affected, would postpone the holding of meetings for the appointment of committees to confer with the Fuel Administrator, or for the purpose of taking action concerning prices and wages, until he has had opportunity to select his advisers and hear from those who believe themselves likely to be adversely affected. Prompt attention will be given to all communications.

"4. Plans are under consideration and will soon be announced whereby production may continue without affecting adversely either the producer or the purchaser pending the examination of applications for revision of prices. Until this plan is announced it is suggested that sales and deliveries be made at the prices fixed, with a stipulation to the effect that if prices are readjusted settlements shall be made accordingly.

"5. For the purpose of determining a proper basis for sales by retail dealers, local committees will be organized throughout the country. Each committee will investigate and report upon the local situation and advise concerning the regulations to be established. When the price is fixed the local committee will be asked to superintend its enforcement.

"6. The Fuel Administration is preparing a plan of apportionment which will secure to domestic consumers their fair share of the coal supply, and at prices which will reflect the prices heretofore promulgated by the President.

"7. Contracts relating to bituminous coal made before the proclamation of the President on August 21, and contracts relating to anthracite coal made before the President's proclamation of August 23, are not affected

by these proclamations, provided the contracts are bona fide in character and are enforceable at law.

"The undersigned has requested the Federal Trade Commission to secure at the earliest moment possible a certified copy of all contracts held to come within the foregoing rule."

On September 7 the following statement was given out:

"The Fuel Administration realizes the acute need of making immediate arrangements to apportion the coal supply and regulate the retail sale of coal. To this end the following plan has been adopted:

"The Fuel Administrator is immediately to choose a representative of the Fuel Administration in each State and Territory. He will also appoint in each State, in conjunction with the State representative, a committee of citizens, who, with the representative, will assume direction of the regulation of the sale of coal in that State. No person will be appointed, either as a State representative or on any of these committees, or any of the committees mentioned below, who is connected with the local coal industry.

"Each State representative, as soon as appointed, will choose a committee of citizens to represent the Fuel Administration in each county of the State and in each city in the State having more than 2,500 population.

"The State representative and the State committee will be chosen directly by the Fuel Administrator, with the approval of the President.

"The county committees and the city committees will be chosen directly by the State representative.

"The State committee will at once ascertain the amount of coal in the State available for use during the coming winter and the amount of coal needed to meet any deficiency in the supply, based on last year's consumption.

"It will be the duty of the various committees to ascertain and report to the Fuel Administration the reasonable retail margin (viz.: the cost of local distribution and a reasonable dealer's profit to be allowed). This margin, when duly fixed by order, together with the cost at the mine named by the President, the transportation charge and the jobber's commission, when sold to a jobber, will constitute the price to the consumer. The Fuel Administration will make public from its local committees in each community sufficient data to enable the individual consumer to ascertain for himself the established price.

"These figures will be compiled with relation to local needs in order that the Fuel Administration may, if necessary, apportion the supply of coal with careful regard to the greatest existing needs. There are many communities today in which there is no supply of coal available at retail prices.



"A very large proportion of the coal supply available for the coming winter is under contract. These contracts, which are allowed to stand for the present, were made prior to the President's proclamation, and very largely limit the amount which may be placed on sale at retail prices based on the President's order.

"It is absolutely essential, however, that a sufficient amount of coal be put on the market at once at these prices to meet the needs of domestic consumers. The Fuel Administration believes that this supply of coal can be made available, and will be made available, by voluntary arrangement between the operators and those with whom they have contracts, and thus make it unnecessary for the Fuel Administration to exercise or recommend the powers, the exercise of which is provided in the Lever act."

On September 11 the following announcement was made:

"Arrangements are rapidly reaching a conclusion which will enable the Fuel Administration to make an announcement concerning the price of coal at the retail dealer's and for small manufacturing plants which have relied upon 'spot' coal.

"Before the end of the present month prices will be announced. It may be necessary to make them tentative, as in the case of the prices fixed for coal at the mines.

"Local committees will be asked to investigate and report upon costs. It is obvious that these will vary considerably between localities and between city and country districts. Care will be taken to include all items which ought to be included, for there is no disposition on the part of the Fuel Administration to deprive the local dealer of his fair measure of profit.

"In this connection Mr. Garfield called attention to the rule governing the appointment of local committees by the State Fuel Administrators, now being chosen. Leading citizens of ability will be placed upon the committee, but the rule states that local coal dealers are excluded. This is with no purpose to discredit the local dealers. They are as patriotic and reliable as any other class of citizens. The rule is made rather to save them from the kind of embarrassment that inevitably arises when men are called upon to pass judgment upon others in their own line of business and to pass upon conditions which are intimately concerned with their own livelihood.

"Although there is a shortage of cars and of labor, Mr. Garfield states that by cooperation between Judge Lovett, of the Priority Board; the Interstate Commerce Commission, and others vested with powers over transportation, cars can be had. He himself has power to apportion and distribute the coal.

"John P. White, president of the United Mine Workers, has accepted Mr. Garfield's invitation to act as one of his advisers."

## PRESIDENTIAL COMMISSION WILL TRY TO SETTLE STRIKES

The following memorandum for the Secretary of Labor was signed by the President, September 19:

I am very much interested in the labor situation in the mountain region and on the Pacific Coast. I have listened with attention and concern to the numerous charges of misconduct and injustice that representatives both of employers and of employes have made against each other. I am not so much concerned, however, with the manner in which they have treated each other in the past as I am desirous of seeing some kind of a working arrangement arrived at for the future, particularly during the period of the war, on a basis that will be fair to all parties concerned. To assist in the accomplishment of that purpose, I have decided to appoint a commission to visit the localities where disagreements have been most frequent as my personal representatives. The commission will consist of William B. Wilson, Secretary of Labor; Col. J. L. Spangler, of Pennsylvania; Verner Z. Reed, of Colorado; John H. Walker, of Illinois; and E. P. Marsh, of Washington. Felix Frankfurter, of New York will act as secretary of the commission.

It will be the duty of the commission to visit in each instance the Governor of the State, advising him that they are there as the personal representatives of the President with a view to lending sympathetic counsel and aid to the State Government in the development of a better understanding between laborers and employes, and also themselves to deal with employers and employes in a conciliatory spirit, seek to compose differences and allay misunderstanding, and in any way that may be open to them to show the active interest of the National Government in furthering arrangements just to both sides. Wherever it is deemed advisable, conferences of employers and employes should be called, with the purpose of working out a mutual understanding between them which will insure the continued operation of the industry on conditions acceptable to both sides. The commission should also endeavor to learn the real causes for any discontent which may exist on either side, not by the formal process of public hearings, but by getting into touch with workmen and employers by the more informal process of personal conversation. I would be pleased to have the commission report to me from time to time such information as may require immediate attention.

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D. W. Brunton, of Denver, Colo., formerly a president of the American Mining Congress and a prominent engineer, spent some time in Washington last month with the War Committee. Mr. Brunton has been very active in Mining Congress matters, and is now lending great assistance in the reestablishment of the Colorado Chapter.



# **PRESIDENT FIXES PRICE ON STEEL, ORE AND COKE**

**Figure Agreed Upon is Higher Than Had  
Been Anticipated—All Concerned Are  
Pleased**

The President has approved an agreement between the War Industries Board and the steel men, fixing the following prices, which become effective immediately, and are subject to revision January 1, 1918, viz:

| Commodity       | Basis                 | Price<br>Agreed<br>Upon | Recent<br>Price | Reduction<br>Amount | Per Cent |
|-----------------|-----------------------|-------------------------|-----------------|---------------------|----------|
| Iron Ore.....   | Lower Lake Ports..... | \$5.05 GT               | \$5.05 GT       |                     |          |
| Coke.....       | Connellsville.....    | 6.00 NT                 | 16.00           | \$10.00             | 62.5     |
| Pig Iron.....   |                       | 33.00 GT                | 58.00 GT        | 25.00               | 43.1     |
| Steel Bars..... | {Pittsburgh.....}     | 2.90 Cwt.               | 5.50 Cwt.       | 2.60                | 47.3     |
|                 | {Chicago.....}        |                         |                 |                     |          |
| Shapes.....     | {Pittsburgh.....}     | 3.00 Cwt.               | 6.00 Cwt.       | 3.00                | 50.0     |
|                 | {Chicago.....}        |                         |                 |                     |          |
| Plates.....     | Chicago.....          | 3.25 Cwt.               | 11.00 Cwt.      | 7.75                | 70.5     |

It was stipulated, first, that there should be no reduction in the present rate of wages; second, that the prices above named should be made to the public and to the Allies, as well as to the Government; and third, that the steel men pledge themselves to exert every effort necessary to keep up the production to the maximum of the past, so long as the war lasts.

Measures will be taken by the War Industries Board for placing orders and supervising the output of the steel mills in such manner as to facilitate and expedite the requirements of the Government and its Allies for war purposes, and to supply the needs of the public according to their public importance and in the best interest of all, as far as practicable.

A spirit of cooperation was manifested by the steel men, and no doubt is entertained that every effort will be made to bring the production as nearly as possible up to the extraordinary demands resulting from the war.

The prices are said to be entirely satisfactory to the steel men and are from \$5 to \$8 higher than had been anticipated by those most closely following the situation. The price of coke is a full \$2 higher than had been expected. At this price for coke it is anticipated that a large number of additional beehive ovens will be constructed.

Those who participated in the concluding negotiations for the fixing of steel prices are as follows:

F. B. Baird, president, Buffalo Union Furnace Company, Buffalo; D. B. Bonnett, vice-president, Pittsburgh Steel Company, Pittsburgh; Frank Billings, president, Tod-Stambaugh Company, Cleveland; L. E. Block, president, Block-Pollock Company, Chicago; C. J. Blue, Jr., vice-president, Carbon Steel Company, Pittsburgh; James B. Bonnor, representative, United States Corporation, Washington, D. C.; J. A. Campbell, president, Youngs-

town Sheet & Tube Co., Youngstown; E. A. S. Clarke, president, Lackawanna Steel Company, New York City; A. H. Cordery, general manager of sales, Phoenix Iron Company, Philadelphia; James A. Crowley, president, James A. Crowley & Co., New York; H. G. Dalton, partner, Pickands Mather & Co., Cleveland; W. B. Dickson, vice-president, Midvale Steel & Ordnance Corporation, New York; J. G. Dooricks, assistant manager of sales, Pittsburgh Steel Company, Pittsburgh; W. H. Donnor, president, Donnor Steel Company, Philadelphia; C. D. Dyer, vice-president,

Shenango Furnaces Company, Pittsburgh; J. A. Farrell, president, United States Steel Corporation, New York; W. J. Filbert, comptroller, United States Steel Corporation, New York; Charles A. Fisher, treasurer, Jones & Laughlin Steel Company, Pittsburgh; A. A. Fowler, partner, Rogers-Brown Iron Company, New York; J. H. Frantz, vice-president, Columbus Iron & Steel Company, Columbus, Ohio; E. H. Gary, chairman, United States Steel Corporation, New York; F. H. Gordon, general manager of sales, Lukens Steel Company, Coatesville, Pa.; E. G. Grace, president, Bethlehem Steel Company, South Bethlehem; D. D. Hall, vice-president, Virginia Iron, Coal & Coke Company, Roanoke, Va.; F. J. Hall, vice-president, Central Iron & Steel Company, Harrisburg; H. F. Holloway, sales manager, Jones & Laughlin Steel Company, Washington, D. C.; J. M. Hanson, president, Forged Steel Wheel Company, Pittsburgh; W. S. Horner, president, National Association of Sheet and T. P. Manufacturers, Pittsburgh; A. F. Huston, president, Lukens Steel Company, Coatesville, Pa.; C. L. Huston, vice-president, Lukens Steel Company, Coatesville, Pa.; H. L. Jones, United Alloy Steel Corporation, Canton, Ohio; Willis L. King, vice-president, Jones & Laughlin Steel Company, Pittsburgh; Robert C. Lea, secretary, Robeson Iron Company, Philadelphia; C. E. Lenhart, president, Century Coke Company, Uniontown, Pa.; W. W. Lukens, secretary, Alan Wood, Iron & Steel Company, Philadelphia; Price McKinney, president, Corrigan-McKinney Company, Cleveland; Charles McKnight, president, Carbon Steel Company, Pittsburgh; W. E. Manning, vice-president, Youngstown Sheet & Tube Company, Youngstown; W. G. Mather, president, Cleveland Cliffs Iron Company, Cleveland; E. W. Mudge, Claire Furnace & Ella Furnace Company, Pittsburgh; L. F. Nagle, Nagle Steel Company, Potts-

town; John C. Neale, vice-president, Midvale Steel Company, Philadelphia, Pa.; John B. Newton, president, Virginia Iron, Coal & Coke Company, Roanoke, Va.; A. Pardee, president, Pardee Steel Works, Philadelphia; Leonard Peckett, president, Empire Steel & Iron Company, Catasauqua, Pa.; William Pigott, first vice-president, Pacific Coast Steel Company, San Francisco; W. S. Pilling, president, Northern Iron Company, Philadelphia; H. H. Pleasants, United Alloy Steel Corporation, Canton; Veryl Preston, president, Eastern Steel Company; R. A. Rainey, managing trustee, Estate of W. J. Rainey, New York; William H. Reeves, vice-president, Phoenix Iron Company, Philadelphia; J. V. W. Reynders, chairman, American Tube & Stamping Company, Bridgeport, Conn.; F. B. Richards, partner, M. A. Hanna Company, Cleveland; James P. Roe, general manager, Glasgow Iron Company, Pottstown; Charles M. Schwab, chairman, Bethlehem Steel Corporation, South Bethlehem; William T. Shepard, treasurer, Rogers-Brown Iron Company, Buffalo; E. E. Slick, vice-president, Cambria Steel Company, Philadelphia; F. K. Smith, vice-president, Valley Mould & Iron Corporation, Sharpsville, Pa.; W. P. Snyder, Jr., vice-president, W. P. Snyder & Co., Pittsburgh; Scott Stewart, general manager, Estate of W. J. Rainey, New York; W. A. Thomas, president, Brier Hill Steel Company, Youngstown; John A. Topping, president, Republic Iron & Steel Company, New York; S. M. Vauclain, vice-president, Standard Steel Works, Philadelphia; C. P. Wheeler, (of) Pickards-Brown Company, Chicago; H. D. Westfall, vice-president, LaBelle Iron Works, Steubenville, Ohio.

### JOHN P. WHITE BEGAN MINING AS TRAPPER BOY AT AGE OF 14

The Fuel Administration has given out officially the following biography of John P. White:

"John P. White, who was appointed adviser to the United States Fuel Administrator and whose appointment was approved by President Wilson on September 14, 1917, is international president of the United Mine Workers of America. He is a resident of Des Moines, Iowa. Mr. White, as assistant to the Fuel Administrator, will deal with labor problems.

"Mr. White was born in Coal Valley, Ill., February 28, 1870. He migrated to Lucas, Iowa, at the age of 12 with his widowed mother. He attended the public schools until the age of 14, when he entered the coal mines as a trapper boy. He filled every position in and about the mines, from trapper boy to miner.

"In August, 1899, he was elected secretary-treasurer of the Iowa miners, and president in 1904. He was elected vice-president of the international union, and served during the year of 1908.

"Declining reelection to international office, he was again chosen head of the Iowa miners, and served them in 1910 and 1911. He assumed the office of international president April 1, 1911, which position he has since held continuously. His present term will expire April 1, 1919.

"Mr. White represented the American labor movement as delegate at the World's Mining Congress in London, England, in 1906.

"The membership of the United Mine Workers on April 1, 1911, was 256,000, which has grown under Mr. White's administration to a membership of 450,000.

"The joint relationship of making contracts by the coal operators and miners, meeting jointly, which had been abrogated, was rehabilitated during Mr. White's first year.

"In 1912 he secured an increase of 5.26 per cent for the bituminous mine workers and a 10 per cent increase for the anthracite mine workers.

"In April, 1916, he secured for the mine workers in the bituminous coal industry an increase of 5 per cent, a universal eight-hour day and universal mine-run, being the consummation of the ideals for which the mine workers had struggled since the existence of the organization. For the anthracite mine workers he secured nine-hour pay for an eight-hour day and an increase ranging from 5 to 17½ per cent and recognition of the union.

"Due to abnormal conditions and the high cost of living, President White called the operators of the bituminous industry to a special informal joint conference in March, 1917, and in April secured an increase for the bituminous coal miners of 20 per cent. Immediately following the bituminous conference, the anthracite operators granted a like increase at his request.

"President White's greatest single achievement is possibly his success in winning the mine workers to a policy of working pending settlements during the periods of making contracts. Before he became president, when contracts expired and new contracts had not been negotiated, the mines of the nation closed down, union and nonunion alike.

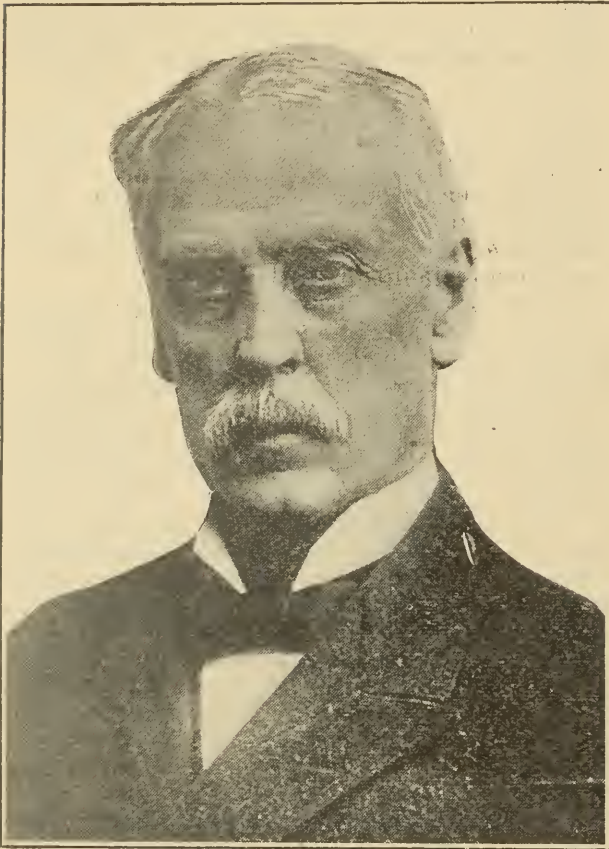
"President White's family consists of his wife and four children—Thomas J. White, aged 25; Paul White, aged 22; Mrs. Marie Haase, and Miss Mildred White, aged 13."

### EXPLOSIVE BILL, MATERIALLY AMENDED, PASSES SENATE

Owing to the radical differences between the explosives bill as passed by the House and that passed by the Senate, considerable difficulty is being experienced by the conferees in reaching an agreement. At this writing, however, there is no indication that a deadlock will result and in all probability the bill will become a law in much the same shape as it was passed by the Senate.



**JUDGE CHARLES C. GOODWIN  
PASSES OVER THE GREAT DIVIDE**



JUDGE GOODWIN

Judge Charles Carroll Goodwin, noted Western editor, author, and mining man, died at his home in Salt Lake City, August 25, at the age of 85 years. He had a most interesting and active career. Born near Rochester, N. Y., he went to California by the Panama route in the early fifties and participated actively in the early mining activities there for several years. He went to Nevada in 1860, where he engaged first in the practice of law and later in newspaper work, where he became a friend and associate of Mark Twain, "Dan DeQuille," Joseph T. Goodman, and others who afterwards became famous writers. He was one of the first district judges when Nevada was admitted to Statehood, and after that was associated as editorial writer with the *Virginia City Enterprise*, where he remained until he went to Salt Lake City, in 1880. After his arrival in Utah he was for twenty-one years editor of the *Salt Lake Tribune*. He left that paper in 1901, and thereafter was editor of *Goodwin's Weekly*.

Judge Goodwin throughout his life in the West was one of the most sincere and effective friends of the mining industry. He attained national recognition in the nineties as an authority on the monetary question, and was long recognized as one of the West's foremost writers on economic and interna-

tional subjects. He was a man of the broadest humanity, and was probably at his literary best when paying tribute to the work of the men who built the West.

In the course of his editorial work in Utah he was frequently called upon to take sharp issue with the leaders of the Mormon Church.

A striking tribute to his character is found in the public expressions following his death by some of the men whom he had most vigorously combatted and who join with the men of other faiths to commend his splendid courage and many virtues and to give him a full share of credit in bringing about the harmonious relations now existing within the State.

**GARFIELD'S ASSISTANT AUTHORITY  
ON PRICE QUESTIONS**

Harry Dwight Nims, who has been appointed an assistant to Fuel Administrator Garfield, was born in Keene, N. H., 1875. He was educated in the public schools of Concord, N. H., and at Williams College, from which he graduated with the degree of A. B. in 1898.

During his college years he spent most of his vacations in business, largely traveling as a salesman. In the fall of 1898 he went to New York City and entered the office of Bergen & Dykman, 189 Montague Street, Brooklyn, N. Y., where he worked as a clerk and studied law at the same time, attending the New York University Law School in the evenings. He was admitted to the bar of the State of New York in 1901, and shortly thereafter opened an office for himself at 32 Nassau Street, New York City. About 1905 he became a partner in the firm of Nash & Jones, 63 Wall Street, New York City, where he continued for about three years.

During this period he published a law treatise under the title of "The Law of Unfair Competition." This book was the first to be published in this country devoted exclusively to this body of law. About 1908 Mr. Nims left Nash & Jones and resumed practice under his own name at 32 Nassau Street, where he now has his office. In the last few years he has written articles on law, and especially law relating to price questions, and has been counsel in various cases involving questions of unfair competition, price cutting, and trade marks. A few days ago the second edition of his book on "Unfair Competition" appeared, and in preparing this edition he has practically rewritten the book and enlarged its scope in various ways.

Mr. Nims lives at Bronxville, Westchester county, N. Y., and is a member of the University Club of New York City, the New York City Bar Association, St. Andrew's Golf Club, and Williams Club.

In 1915 he was given an honorary degree of Master of Arts by Williams College, in recognition of his work on "Unfair Competition" and similar subjects.



## ANNUAL ASSESSMENT BILL PASSES THE HOUSE

### Only Three Votes Against Exemption of Claim Holders for Work in 1917

With only three votes against it the bill relieving the holders of mining claims from their assessment work during 1917 has been passed by the House. The bill already has passed the Senate but was materially amended by the House Committee. All of the House amendments in addition to one by Representative Mondell, of Wyoming, which excluded from the provisions of the bill oil lands taken up under the placer laws were adopted.

Mr. Taylor, in urging the passage of the bill, said:

"On the 18th of last June, I introduced House bill 5081, providing for the suspension during this year of that provision of the mining law requiring \$100 worth of work to be annually performed upon mining claims, which is known as annual assessment work.

"Along about that time, or possibly earlier, several similar bills were introduced in the Senate. The resolution under consideration—Senate joint resolution 78—was passed by the Senate on July 9 and was referred to the Mines and Mining Committee of the House. The Senate Committee had not submitted the matter to the Interior Department or the Bureau of Mines for report, and the Mines and Mining Committee of the House deemed it of sufficient importance to warrant obtaining the opinion of the Interior Department upon the subject.

"Both my bill and the Senate resolution were referred to the Interior Department, and three reports obtained thereon. As a result of these reports and the consideration by the committee, it was deemed advisable to substitute my bill for the Senate resolution. The Senate resolution, as it passed the Senate, covers the period during the war, whereas my bill only extends it for this year. But the Senate resolution provided for a showing as to the claimants doing a hundred dollars' worth of work in certain other capacities, which the Interior Department reported was impracticable and inadvisable and unnecessary. For that reason the committee asked the adoption of this substitute, and very earnestly recommended the passage of this bill.

"The gentleman from Massachusetts (Mr. Walsh) is entirely in error in assuming that this measure is solely in the interest of the large corporations. As a matter of fact, it is of very little concern to the mining corporations generally, excepting that they would be injured by losing the services of a large number of good miners during the time they would be required to do their own assessment work on claims.

"The fact is that there is such a scarcity of labor throughout the mining sections of the West at this time that it is impossible

for people to secure miners to do their assessment work, and the result is the assessment work will have to be left undone very largely—at least, a large per cent of what is not already done—because of the inability of the owners of claims to secure the labor necessary to perform this work.

"I have received quite a large number of letters and telegrams and resolutions in support of this measure. Of course, the members of the House will remember that we some time ago passed a bill relieving locators who had joined the Army or Navy or other branches of the service from performing annual assessment work during their period of service. But that is not sufficient to meet conditions in the West at this time. The poor prospector does his own work, and the man of means hire men away from producing properties for that purpose.

"In times of distress like these, when it is important to produce as much mineral as possible, it is of the utmost importance for the Government itself to temporarily waive the requirements of this annual labor. A law of this kind generally in effect is fair to everybody and will be beneficial to the whole country. It will obviate the necessity of taking men away from producing mines, and thereby increase the production of mineral; and, as I stated in my report on the bill, there are ten times more reasons why this law should be passed than it was for the similar acts of 1893 and 1894.

"The present high price of metals has brought about great prosperity to the large mines. But small operators, with narrow and variable ore bodies, are not so fortunate. To them the proportion of expenses, represented by labor and explosives, have risen so high that it has very greatly offset the increased value of their products. In fact, many mines are so short of men that they are prevented from taking advantage of a favorable market. Throughout the West generally the labor situation was never so adverse as it is in the mines at this time."

Representative Walsh of Massachusetts opposed the bill vigorously. A portion of his remarks follow:

"I am opposed to the passage of this measure. It is possible, and I presume it will be thought very probable, that my opposition is due to my ignorance of mining laws and mining conditions; but it is proposed by this bill, by a special act, to relieve men who have entered upon mining claims from the terms of the conditions which were imposed upon them when they entered upon those claims, namely, that they should perform work to the amount of \$100 in each year; and if they failed to do that their claim should then cease, and such claim or location would be open for entry by any other person who might care to perform the requirements of the law and make entry thereon.

"I am opposed to this because it is not a war measure. We have passed two or three special acts relieving the settlers and the



worthy pioneers who are prospecting and assisting in the development of these great Western States from the terms and conditions of the statutes where the relief was desired because of absence from home and active participation in the war.

"Nobody can contend that the Government of the United States has not been fair and most generous to the men who go out into that far western country and engage in this sort of work. The laws that have been passed have been such as to encourage them to go into these occupations, and the statutes have been passed giving them every protection. The Federal Government is expending much money for the benefit of the favored few, and the day seems still far distant when the great West will be willing to get down to earth on a plane with the rest of the common people."

#### **S. J. Res. 78**

#### **JOINT RESOLUTION**

To suspend the requirements of annual assessment work on mining claims during the years 1917 and 1918.

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That in order that labor may be most effectively used in raising and producing those things needed in the prosecution of the present war with Germany, that the provision of section twenty-three hundred and twenty-four of the Revised Statutes of the United States which requires on each mining claim located, and until a patent has been issued therefor, not less than \$100 worth of labor to be performed or improvements to be made during each year, be, and the same is hereby, suspended during the years 1917 and 1918. Provided, That every claimant of any such mining claim in order to obtain the benefits of this Resolution shall file or cause to be filed in the office where the location notice or certificate is recorded, on or before December 31 of each of the years 1917 and 1918, a notice of his desire to hold said mining claim under this Resolution: Provided, further, that this Resolution shall not apply to oil placer locations or claims.

#### **TIDEWATER EXCHANGE OFFERS SERVICES TO GARFIELD**

A delegation of the Tidewater Coal Exchange called on Fuel Administrator Garfield September 14 to explain the purposes of their organization and promise him their full cooperation in his work. The organization has been formed for the purpose of pooling coal for shipment and thereby avoiding detention of cars and ships and of bringing about maximum capacity loading. Those who called on the Fuel Administrator were Arthur Hale, S. Pemberton Hutchinson, Rembrandt Peale, E. B. Chase, L. A. Snead and Kuper Hood.

#### **GARFIELD REQUESTS OPERATORS TO ACT THROUGH ASSOCIATIONS**

Following the suggestion of Dr. Garfield, a letter has been sent to all secretaries of coal trade associations, as follows:

1. Since the Federal authorities must consider conditions in districts rather than in individual companies or mines, coal producers will facilitate matters by arranging to act by associations or by groups covering districts generally recognized in the trade, such as the Pittsburgh district, the Fairmont, the Franklin County, etc.

2. Operators in each district which desires prices changed should make written application to Dr. Garfield for a change.

3. This written application should be accompanied by the following data:

a. A consolidated statement for the district, showing its average cost for the year 1916, and for each month of 1917 to date. This statement should be compiled from cost reports of the different operators represented, who should prepare their cost reports on the cost forms approved and issued by the Federal Trade Commission, and in accordance with the Commission's instructions therefor. Copies of these forms and instructions reprinted by the National Coal Operators are sent you herewith.

b. The cost reports of the different operators which have been combined in the consolidated statement should be attached thereto and forwarded with it.

c. A consolidated statement for the district giving tonnage sold and receipts f. o. b. mines by grades and sizes of coal for the year 1916, and by months to date for 1917. This should be accompanied by the reports of the individual concerns combined therein.

d. A brief statement explaining the character and chief uses of the coal from your district, that is, high-volatile, steam by-product, domestic, etc.

e. A brief statement explaining what are the chief markets for the output of your district, and what other coals are your chief competitors in such markets.

If operators in your territory follow the above course of procedure, they will save much waste of time and money. Nothing can be gained by sending committees to Washington until the above information has been properly compiled and forwarded to Washington, and until the Federal Trade Commission has had opportunity to examine it.

Pending decision by the Federal authorities respecting price changes, the National Association of Coal Operators strongly urges that no mine be closed; that sales be made subject to change in present prices by the Government, and that all producers cooperate fully with Dr. Garfield and his staff, and other agencies of the Government in the present emergency.

# U. S. PLACER MINING LAWS AS APPLIED TO OIL

BY HON. JOSEPH W. THOMPSON,  
*Late Examiner of the U. S. Bureau of Mines*  
*Continued from September issue*

## DISCOVERY AS APPLIED TO OIL LOCATIONS

*(Continued from September issue.)*

The principle moulded and applied by the courts to lode locations as to the sufficiency of discovery applies to placer claims, and they are applicable "in all their intensity and force to oil locations."<sup>25</sup> The statute requiring as a condition to a valid location a discovery of mineral within the limits of the claim should, as between conflicting mineral claimants, receive a broad and liberal construction so as to protect bona fide locators who have really made a discovery of mineral.<sup>26</sup> A locator who has discovered petroleum or other mineral oils upon the public domain and has shown the land to be mineral in character is entitled to hold his location as against a nonmineral applicant who fails to show that the land was open to settlement as nonmineral.<sup>27</sup> A discovery in a placer, as in other locations, must be sufficient to justify a prudent mind in the expenditure of money and labor in exploitation for petroleum. But the question is not to be left to the arbitrary will of the locator. "Willingness, unless evidenced by actual exploitation, would be a mere mental state which could not be satisfactorily proved. The facts which are within the observation of the discoverer and which induce him to locate should be such as would justify a man of ordinary prudence, not necessarily a skilled miner, in the expenditure of his time and money in the development of the property."<sup>28</sup> There must be such a discovery of mineral in the ground claimed as placer that makes it valuable for mining.<sup>29</sup> The mineral or oil need not be of commercial value.<sup>30</sup>

If a competent locator actually finds upon unappropriated public land petroleum or other mineral in or upon the ground, and so situated as to constitute a part of it, it is a sufficient discovery . . . without waiting to ascertain by exploration whether the ground contains the mineral in sufficient quantity to pay."<sup>31</sup> Oil discovered in a well drilled to the depth of 35 feet and on another claim in a well drilled to the depth of 57 feet, sufficient in quantity to justify a person of ordinary prudence in making further expenditures of money and labor, with a reasonable prospect

of success in developing a valuable deposit of oil, was said to be sufficient as a discovery.<sup>32</sup> The discovery must be such as to give reasonable evidence that the ground claimed is valuable for mining oil, but beyond that the locator is not required to go. He is not required, as said in one case<sup>33</sup> to go to the vein or deposit from which the oil is drawn. Such a rule cannot be applied to placer claims.<sup>34</sup>

## GEOLOGICAL FORMATION—ELEMENT OF DISCOVERY

Geological formation alone does not answer the requirement of a discovery. If it were the intention of the mining laws to require positive proof of a profitable working mine, a deposit of mineral that could be worked with profit, then no other element could influence the rule of discovery. But the law is satisfied with much less, and courts and officers authorized to determine the question of discovery have never required such proof. If this were true, discovery would be a conclusion of law and not a question of fact; but so long as the question remains one of fact, then every element that tends to establish the final fact is for reasonable consideration.

This reasoning leads to the proposition that geological formation is an important feature in determining the question of the sufficiency of the discovery so long as it remains a question of fact. Geology may not be an unerring signboard to valuable mineral deposits, but few prospectors would think of undertaking to locate a mining claim without the practical observation of geological conditions. Minerals are known to exist in connection with certain geological formations, and mineral deposits are sought for by practical miners in connection with or in relation to the geological formation. This rule obtains as much to petroleum deposits as to other minerals. Oil geology is an up-to-date science. A patent geological fact is the occurrence of oil fields on the flanks of the great centers or lines of uplift. All the American oil fields occur in folded regions contiguous to centers or lines of disturbance. They are known not to occur on the centers of these uplifts, as these are the older granitic rocks

<sup>25</sup>United States v. McCutchen, 238 Federal, 575, p. 590.

<sup>26</sup>Nevada Sierra Oil Company v. Home Oil Company, 98 Federal, 673; United States v. Ohio Oil Company, 240 Federal, 996, p. 1001.

<sup>27</sup>Riverside Oil Company v. Hitchcock, 21 App. Cases, D. C., 252, p. 264.

<sup>28</sup>Chrisman v. Miller, 197 U. S. 313, p. 322.

<sup>29</sup>Chrisman v. Miller, 197 U. S., 313, p. 323.

<sup>30</sup>United States v. Ohio Oil Company, 240 Federal, 996, p. 998.

<sup>31</sup>Nevada Sierra Oil Company v. Home Oil Company, 98 Federal, 673; United States v. Ohio Oil Company, 240 Federal, 996, p. 1001.

<sup>32</sup>United States v. Ohio Oil Company, 240 Federal, 996, p. 999.

<sup>33</sup>Bay v. Oklahoma Southern Gas, Oil and Mining Company, 13 Okla., 425; 73 Pac., 936.

<sup>34</sup>United States v. Ohio Oil Company, 240 Federal, 996, p. 1003.



that do not carry oil. The California oil fields occur both on the east side of the Coast Range and the west side of the Sierras Nevada. The Utah, the Wyoming, and Colorado fields occur on the flanks of the Rocky Mountains, and all other fields are known to occur on the flanks of some uplife.<sup>35</sup> Scientists point out the fact that oil occurs in sedimentary rocks and beds formed along seashores, in inbound bays and at river mouths. It is associated with some form of a folded or arched structure. So, as a rule, igneous rocks do not contain oil. One author concludes that by observing the points indicated a person can enter a new field and quickly determine whether or not it is favorable for oil. Practical oil geology not only points out the scientific principles, but states the favorable and unfavorable indications of oil and lays down formulated rules for drilling locations.

It has not only furnished these data, but has virtually mapped out many oil fields and given the approximate distances to the oil sand. The mineral character and the oil character of lands are now determined from geological data, and public lands are classified and withdrawn from mining locations on scientific principles.

In contests between mineral claimants or between a mineral and an agricultural claimant, involving the sufficiency of discovery, the adjudicated cases show that expert testimony has been admitted and geologists have given their views of the geological formation of the particular place in controversy and stated as their opinion whether or not under the existing conditions minerals would or would not exist. In a case involving the validity of a placer location it was stated that the fact of the sufficiency of discovery must be decided not only with reference to the gold actually found within the limits of the claim located, but also with regard to its situation in relation to other known valuable deposits of placer gold and in conformity to the general geological features of such deposits. In this instance a miner had washed a few pans of sediment deposited along the sides of a creek and found in each small particles of colors of gold, and the fact that placer gold in paying quantities had been found upon the bedrock of a tributary to such creek within a mile or so of the claim located was held to be a governing factor on the question of discovery sufficient to support a placer location.<sup>36</sup>

Reasoning from analogy and with the liberal purpose of the petroleum statute in view,

the logical conclusion is that a slight discovery of oil within a given location that is in a well-known oil field, or within what may be termed a geological oil field, might afford sufficient presumptive evidence to justify an oil location. Certainly, the law, under such circumstances, would not require paying production to justify the location.

#### OIL SEEPAGE A DISCOVERY

It is still a mooted question as to whether or not an oil seepage is within the meaning of the mining statutes a sufficient discovery. No court and no officer in authority has yet held that a seepage of oil may not be regarded as a sufficient discovery on which to base an oil location. Courts and the General Land Office in particular cases have held that mere indications of oil as established by the evidence were not a sufficient discovery. Thus, in one case, the proof showed nothing more than a bituminous sand, which, when excavated, gave out a distinct odor of petroleum.<sup>37</sup> In another case the proof showed nothing more than indications of oil under the surface of the ground in question, and seepages of oil and producing wells upon adjoining lands.<sup>38</sup> Gas of "an unsubstantial and negligible character, not relied upon at the time as of any value" was insufficient to constitute a discovery.<sup>39</sup> The proof was insufficient where it showed that upon the land described a stratum of bituminous sand stone or shale some 6 feet in thickness from which at several points on the land a small quantity of oil seeped.<sup>40</sup> In another case the proof was held insufficient where it showed a seepage of oil beneath a large rock upon the surface of a spring of water that had stained some of the surrounding rocks and some of the oil was skimmed off and collected, but no oil had been discovered in a well 1,400 feet deep on one of the group claims.<sup>41</sup> Proof that the oil came out and flowed over the water in the summer and that there was little water with oil and a little oil with water, was held insufficient to justify a location.<sup>42</sup> Proof that the locator found "some oil sand stained with oil and a ridge of fossil," and that oil had been discovered in a well some 2 miles distant and the geological formation indicated the probable existence of oil bearing strata in the claim, was insufficient to justify a location.<sup>43</sup> A production of 1½ gallons of oil 43 feet below the surface was not sufficient discovery on which to base an oil location.<sup>44</sup>

These are perhaps all of the adjudicated cases on the question of "seepage" or surface discovery of petroleum on locations made

<sup>35</sup>Hager's Practical Oil Geology, p. 48.

<sup>36</sup>Lange v. Robinson, 148 Federal, 799, pp. 801-804.

<sup>37</sup>Olive Land and Development Company v. Olmstead, 103 Federal, 568.

<sup>38</sup>Nevada Sierra Oil Company v. Home Oil Company, 98 Federal, 673.

<sup>39</sup>United States v. McCutchen, 238 Federal, 575.

<sup>40</sup>Southwestern Oil Company v. Atlantic and Pacific R. R. Co., 39 Land Decisions, 335.

<sup>41</sup>Butte Oil Company, In re, 40 L. D., 602.

<sup>42</sup>Miller v. Chrisman, 140 Cal., 440; 73 Pac., 1083, 197 U. S., 313.

<sup>43</sup>New England and Coalinga Oil Company v. Congdon, 152 Cal., 211; 92 Pac., 180.

<sup>44</sup>Bay v. Oklahoma Southern Gas, Oil and Mining Company, 13 Okla., 425; 73 Pac., 936.



under the Act of February 11, 1897. The cases expressly leave the question undecided. Thus in one case cited, it is said, "It is not necessary in the decision of this case to hold that under no conceivable circumstances could there be such seepages or flows of oil on the surface of land, as when found by one attempting to locate a mining claim, would constitute a discovery."<sup>45</sup> And in another case referred to, the court said: "While perhaps it would be stating it too broadly to say that no case can be imagined where a surface discovery may be made of oil sufficient to fill the requirements of the statute, yet it is certainly true that no such case has ever been presented to our attention, and that in the nature of things, such a case will seldom, if ever, occur."<sup>46</sup> Another point in some at least of these cases that must not be overlooked, is to the effect that the proof of the seepage or the presence of oil was not sufficient to show either that the land was chiefly valuable for oil or that the oil, if any existed, was within or under the particular land in controversy. Thus in the Butte Oil Company case at page 606, it is said: "The slight flow of gas and the small seepages of oil were indications that there possibly is a reservoir of oil lying at an unknown depth and situated at some unknown distance from the land."

These cases by no means establish the rule that seepage is insufficient as a discovery. Each case is strictly *sui generis* and is not to be extended beyond its facts. Indeed, the Land Office and the courts were careful to disclaim any intention to decide the particular question. Thus the Land Office has said: "It is not necessary in the decision of this case to hold that under no conceivable circumstances could there be such seepages or flows of oil on the surface of land as when found by one attempting to locate a mining claim would constitute a discovery."<sup>47</sup> And in another case, a court in passing, said: "It would be stating it too broadly to say that no case can be imagined where a surface discovery may be made of oil sufficient to fill the requirements of the statute."<sup>48</sup> A federal judge in a recent case says: "It would not do to say that the discovery of seepage oil upon a mining location could not in any case constitute a discovery."<sup>49</sup>

The question as to the possibility of oil seepage being a sufficient discovery remains undecided. That the question will be presented for decision is both probable and important. There is no record that even the major prophets ever undertook to foretell the decision of either a court or a jury on any given question, yet reasoning is permitted in

an attempt to arrive at the intention of a statute that leaves discovery as a question of fact, and as to the correctness of a conclusion that should be reached by a court.

Oil seepages exist as well-known facts. Scientists have studied it from its geological aspect and in its practical application to commercial drilling. The discovered oil seepages vary from the slight exudation to a profitable flow of oil. In some regions there are seepages of crude oil which intimate the existence of supplies beneath the earth and occasionally the issuing oil is allowed to accumulate in pools from which it is periodically removed.<sup>50</sup> "Petroleum seepages, burned out shales, oil stained sands and shale, 'gas burns,' gas bubbles on water, and asphalt or breccia beds are all indications of petroleum."<sup>51</sup> Where the oil rock reaches the surface there is generally some sign of petroleum. It should be looked for in low ground, in the beds of streams, or at the foot of hills, if the streams be bent in anticlinal form, at or near the crest of the incline. A seepage may be noticed where the outcrop crosses the valley of some small stream or gulley.<sup>52</sup> Surface indications vary according to the class of oil, the nature of the strata and the geological structure. Actual "shows" of oil are of great importance when taken in connection with the structure.<sup>53</sup>

A seepage of oil means necessarily more than mere indications of oil as suggested in the decided cases. It must per force, be an actual presence of oil, in sufficient quantity, not only to be visualized, but to be collected and saved as such in some appreciable quantity. It must at least bear the relation to some existing deposit of oil that an exposed sample of quartz or a visualized part of a vein, bears to the lode or vein, or as the presence of gold, found by panning, bears to the supposed placer deposit. True, the seepage must demonstrate with reasonable certainty that oil exists and is to be found within the limits of a given location. But this fact should be considered in the light of the fugitive nature of oil. And aside from this, the geologic structure of the beds from which oil exudes may point with sufficient certainty to the location of the oil bed within the limits of the claim.

Practical oil geology teaches that seepages may flow from crevices or faults or be produced by erosion of the beds containing oil. Geology now gives rules for making locations of wells for drilling with reference to a seepage or outcropping where the structural features are known. Under such rules the well is to be located down the dip from the oil seepage. Such is the certainty with which

<sup>45</sup>Butte Oil Company, *In re*, 40 L. D., 602, p. 606.

<sup>46</sup>Nevada Sierra Oil Company v. Home Oil Company, 98 Federal, 673.

<sup>47</sup>Butte Oil Company, *In re*, 40 L. D., 602, p. 606.

<sup>48</sup>Nevada Sierra Oil Company v. Home Oil Company, 98 Federal, 673.

<sup>49</sup>United States v. Ohio Oil Company, 240 Federal, 996, p. 998.

<sup>50</sup>Thompson's Petroleum Mining, p. 94.

<sup>51</sup>Hager's Practical Geology, p. 69.

<sup>52</sup>Craig's Oil Finding, pp. 89-90.

<sup>53</sup>Craig's Oil Finding, pp. 89-90.



geology deals with this question that complete tables have been formulated for many of the fields showing the various distances to the oil sand and the necessary depth of a well at any given place.

Ordinarily oil is found by drilling or boring into the interior of the earth and it either flows from a well drilled or is pumped to the surface.<sup>54</sup> The court in the case cited made an additional statement to the effect that "until some body or vein has been discovered from which oil can be brought to the surface, it can not be considered of sufficient importance to warrant a location under the mineral laws."<sup>55</sup> This was said with reference to the particular case in hand and in the absence of any seepage and as a conclusion by which actual knowledge of the presence of oil was made known. But the admission is, and it reflects the common experience of oil operators, that when a well is drilled the oil either "flows or is pumped to the surface." The logic of the statement is that the oil must be produced at the surface; that it must be visualized. The court can not, in view of other authorities, mean that the well must be a success commercially. But if oil may flow to the surface when a well is drilled, a common experience in oil production, the same force or pressure may bring oil to the surface where nature has furnished a sufficient crevice or opening. The pith of the scheme in either case is to get the oil to the surface, with the difference remaining that the well may point directly to the deposit, while the fault or crevice may point indirectly to the pool of oil.

The authorities taken with the statute establish three propositions on the question of oil discovery: 1. Some visualized oil. 2. Geological formation indicating an oil deposit. 3. Willingness of a prudent mind to expend money and labor with a reasonable prospect of finding oil. The question is resolved to the proposition: Is the seepage sufficient, taken in connection with the geological formation and any other existing evidences, to induce a prudent person to expend money and labor in the expectation of finding a profitable deposit of oil.

#### Itineraries of Mine-Rescue Cars

Rescue cars of the Bureau of Mines will visit the following places on the dates indicated:

Car No. 1, headquarters Reno, Nev., Edward Steidle, mining engineer, in charge—Reno, Nev., October 15 to 16; Berkeley, Cal., October 17 to 30; Palo Alto, Cal., October 31 to November 6; Martell, Cal., November 7 to 20; Chinese Camp, Cal., November 21 to 27; Angels Camp, Cal., November 28 to December 4; Reno, Nev. (headquarters), December 5 to about February 10.

Car No. 3, G. T. Powell, forman-miner, in charge—Terre Haute, Ind., October 1 to 15; Clinton, Ind., October 16 to November 3; Jasonville, Ind., November 5 to 19; Linton, Ind., November 20 to 30; Dugger, Ind., December 1 to 8; Cass, Ind., December 9 to 17.

#### FEDERAL TRADE COMMISSION ASKS FOR DETAILED DATA

With the approval of Dr. Garfield, the Federal Trade Commission is sending out the following request for information:

Please take notice that, by virtue of the power granted to the Federal Trade Commission by the provisions of Section 6 of an Act of Congress, approved September 26, 1914, entitled "An Act to create a Federal Trade Commission, to define its powers and duties, and for other purposes," you are hereby required to file with the Federal Trade Commission, at its office at Fifteenth and K Streets, Washington, D. C., within ten days after the receipt of this notice by you, a report in writing of (a) all documents relating to the purchase or sale of bituminous coal by you, which documents you claim constitute bona fide contracts enforceable at law and in full force and effect on the 21st day of August, 1917; (b) all documents relating to the purchase or sale of anthracite coal by you, which documents you claim constitute bona fide contracts enforceable at law and in full force and effect on the 1st day of September, 1917, and you are further hereby required to file as aforesaid with such report true copies of any such documents relating to the purchase or sale of coal by you, which you claim constitute a bona fide contract enforceable at law, and with such report you are hereby further required to state in reference to each of said contracts, (1) the date of its execution; (2) the price at which coal bought or sold pursuant thereto was billed by, or to you, on August 21, 1917, or the nearest date thereto, if for bituminous coal, and the price as aforesaid on September 1, 1917, or the nearest thereto, if for anthracite coal; (3) the quantity of coal which you have delivered or have received thereon on August 21, 1917, if for bituminous coal, or to September 1, 1917, if for anthracite coal, and (4) a definite specification or statement of any allowance, split commission, premium, rebate, or payment of any sort, made or to be made by you, to any sales agent or jobber, or any person interested in the coal transferred or to be transferred thereby.

Henry R. Harriman, of Seattle, Wash., who has been spending considerable time in the East, recently returned to Washington after an extended trip in Massachusetts.

<sup>54</sup>Craig's Oil Finding, p. 143.

<sup>55</sup>Bay v. Oklahoma Southern Gas, Oil and Mining Company, 13 Okla., 425. (This case has been criticised and repudiated on this particular point. United States v. Ohio Oil Company, 240 Federal, 996, p. 1003.)



A RECORD CAR OF ORE

Shipped recently to the Tacoma smelters by the Big Creek Mining Company of Wallace, Idaho. \_ It is said to be the most valuable carload of ore ever shipped from Couer d'Alenes.

### NO TERM FOR GOLD IN THE NAVAJO LANGUAGE

Discussing the occurrence of gold in the Navajo country, Herbert E. Gregory, in a professional paper just published by the Geological Survey, says:

"Gold ornaments have not been found in the ruins of the cliff houses of northern Arizona, and the Hopis appear to have been introduced to this metal by the Spaniards. The Navajos likewise have no native term for gold, and the Spanish explorers, always on the lookout for gold and silver, vigorously expressed their disappointment at the absence of precious metals in the Navajo country. In spite of these significant facts, prospectors who have been able to circumvent the hostility of the native tribes have from time to time conducted explorations in the more accessible parts of the reservation, and the belief is still strong in certain quarters that gold in large quantities remains to be discovered in this section of the Plateau province. For this reason the following sketch of the history of the exploration for gold is given:

"In 1869 a party of twenty-two prospectors, under the leadership of Calvin Jackson, reached San Juan River by way of Fort Wingate and Fort Defiance without finding gold or silver along the route. One member of this party, Adnah French, is reported to have returned at a later date, and the worthless prospect holes in the shales underlying the lava at French Butte are credited to him. The unfavorable results obtained by the well-equipped Jackson expedition served to discourage prospectors for the next 20 years, but beginning with 1891 interest was again aroused by reports of discoveries on lower San Juan River and at Carrizo Mountain."

Charles H. Smith, of New York, was in Washington several days last month on business.

### COAL SHIPMENTS SHOW SLIGHT INCREASE DURING AUGUST

There was an increase in the shipments of bituminous coal in August, 1917, compared with July, 1917, of 16,857 cars, or 2.5 per cent, and an increase compared with August, 1916, of 68,570 cars, or 10.8 per cent, according to figures compiled by C. E. Leshner, of the United States Geological Survey. There were, however, 27 working days in August, 1917, and but 25 in July. The average daily loading in August, 1917, was 5.1 per cent less than in July, which corresponds with the information contained in the weekly reports published by the Geological Survey, showing during August a decreased rate of production. Although the largest decrease in average daily loading was in eastern Kentucky and in Illinois and Indiana, owing to labor strikes in these districts, all the groups shown in the table recorded decreases in the average daily loading except the Rocky Mountain and Western States. All the groups showed increases in August, 1917, over August, 1916, except the low-volatile fields of Pennsylvania, Maryland, and West Virginia. Daily and weekly reports received by the Geological Survey show that the average daily rate was at its maximum in the first week of July, descended to a minimum by the middle of August, and has been slowly gaining since that time.

The shipments of beehive coke in August, 1917, decreased 1.6 per cent compared with July, 1917, and 3.2 per cent compared with August, 1916.

F. G. Cottrell, chief metallurgist of the Bureau of Mines, and A. E. Wells, superintendent of the Salt Lake City station of the same bureau, are paying personal visits to the more important smelters in the West in connection with the smelter fume work being done by the bureau.



### NEW LIST OF PURCHASERS OF MANGANESE ORE COMPILED

A revised list of the purchasers of manganese ores has been compiled by the Geological Survey. It follows:

N. A. Adler, Batesville, Ark.; Alleghany Ore and Iron Company, Buena Vista, Va.; American Carbon and Battery Company, East St. Louis, Ill.; American Manganese Manufacturing Company, Dunbar, Pa. (352 Bullitt Building, Philadelphia, Pa.); American Smelting and Refining Company, Murray, Utah; American Steel Foundries Company, Chicago, Ill.; Anglo-American Flashlight Company, Pittsburgh, Pa.; Basic Metals Company, Pittsburgh, Pa.; Berkshire Iron Works, Bullitt building, Philadelphia, Pa.; Binney & Smith, 81 Fulton Street, New York, N. Y.; Bethlehem Steel Corporation, South Bethlehem, Pa.; Arthur B. Bibbins, Baltimore, Md.; Bilrowe Alloys Company, Bernice Building, Tacoma, Wash.; Charles A. Burdick, E. M., 74 Broadway, New York, N. Y.; C. F. Burgess Laboratories, Madison, Wis.; Cambria Steel Company, Pittsburgh, Pa.; Carnegie Steel Company, Pittsburgh, Pa.; Central Iron and Coal Company, Holt, Ala.; Charcoal Iron Company, Detroit, Mich.; Colorado Fuel and Iron Company, Pueblo, Colo.; W. R. Cuthbert, Lynchburg, Va.; Delaware River Steel Company, Chester, Pa.; W. H. Denison, Cushman, Ark.; Electric Reduction Company, Washington, Pa.; Eastern Steel Company, Pottsville, Pa.; Empire Steel and Iron Company, Catasauqua, Pa.; Eureka Manganese Company, Birmingham, Ala.; Fuller & Warren Company, Troy, N. Y.; Robert Gilchrist, Elizabethtown, N. J.; Goldschmidt Thermit Company, New York, N. Y.; R. L. Handford, Cushman, Ark.; Harshaw, Fuller & Goodwin Company, Electric Building, Cleveland, Ohio; Hazel-Atlas Glass Company, Clarksburg, W. Va.; Hickman, Williams & Co., St. Louis, Mo.; C. W. Hill Chemical Company, Los Angeles, Cal.; Illinois Glass Company, Alton, Ill.; Illinois Pacific Glass Company, San Francisco, Cal.; Illinois Steel Company, South Chicago, Ill.; International Smelting Company, Salt Lake City, Utah; Jones & Laughlin Steel Company, Pittsburgh, Pa.; Juniata Furnace and Foundry Company, 30 West Girard Avenue, Philadelphia, Pa.; Lackawanna Iron and Steel Company, United States Express Building, Buffalo, N. Y.; J. S. Yamson & Bro., Inc., 80 Maiden Lane, New York, N. Y.; Lebanon Blast Furnace Company, Lebanon, Pa.; E. J. Lavino & Co., Bullitt Building, Philadelphia, Pa.; David Loeser, 1400 Broadway, New York, N. Y.; Los Angeles Pressed Brick Company, Los Angeles Val.; Lowmoor Iron Company of Virginia, Lowmoor, Va.; Manganese Products Company, 30 East Forty-second Street, New York, N. Y.; Manhattan Electrical Supply Company, 41-47 Morris Street, Jersey City, N. J.; Miami Metals Company, People's Gas

Building, Chicago, Ill.; National Alloy Company, Philadelphia, Pa.; National Carbon Company, Cleveland, Ohio; Noble Electric Steel Company, Heroult, Cal. (995 Market Street, San Francisco, Cal.); Oakley Paint Manufacturing Company, Los Angeles, Cal.; Pacific Coast Steel Company, Seattle, Wash.; Pacific Sewer Pipe Company, Los Angeles, Cal.; Pittsburgh Lamp, Brass and Glass Company, Pittsburgh, Pa.; Pittsburgh Steel Company, Pittsburgh, Pa.; Pulaski Iron Company, Pulaski, Va.; A. P. Rice, Spencer, Ohio; Ricketson Mineral Paints Works, Milwaukee, Wis.; Rogers Brown Company, New York, N. Y.; Frank Samuel, Philadelphia, Pa.; Seaboard Manganese and Steel Corporation, Temple, Pa.; Arthur Seligman, 165 Broadway, New York, N. Y.; Sligo Furnace Company, Sligo, Mo.; Sloss-Sheffield Steel and Iron Company, Birmingham, Ala.; Southern Manganese Corporation, Anniston, Ala.; Oscar Stromberg, Tribune Building, New York, N. Y.; Tennessee Coal, Iron and Railroad Company, Birmingham, Ala.; United States Glass Company, Pittsburgh, Pa.; United States Smelting, Refining and Mining Company, Salt Lake City, Utah; Utah Iron and Steel Company, Salt Lake City, Utah; United States Steel Corporation, Pittsburgh, Pa., South Chicago, Ill., and Birmingham, Ala.; Vanadium Steel Alloys Company, Latrobe, Pa.

### MECHANICAL VENTILATION IN METAL MINES DISCUSSED

"The need and importance of mechanical ventilation in metal mines may be summarized as follows:

"1. To provide good quality of air for the underground workers in all parts of the mines, including the face. The exception would have to be made for conditions for the face immediately after blasting, and then only for a short time, during which the miner must be kept out from the face, for the sake of his health and for the best interest of the mines operator.

"2. To keep down the temperature of the mine air at the working place.

"3. To provide a positive movement of the air in hot working places in order to keep down the bodily temperature of the worker, and thus increase his efficiency.

"4. To provide a positive current of air so that in the event of fire the underground workers may escape by traveling against the fresh intaking air. This is, of course, provided the fire has not occurred in the intake. If it has, the only possible way of saving all the men is by immediate reversal of the fan, except as they may bulkhead themselves in and await rescue later."—George S. Rice, Chief Mining Engineer, Bureau of Mines, from an address at the sixth annual Safety Congress, held in New York recently.



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## POTASH LEASING BILL NOW IN CONFERENCE

### Measure Passes House With Little Opposition —Prominent Men Testify at Hearing

While some objection was voiced to the general plan of leasing when the potash bill came up in the House for final consideration, there was no real opposition to it and it passed without a roll call. Prior to making a unanimous favorable report on the measure, which had passed the Senate the month preceding, the House Committee on Public Lands conducted a hearing at which the necessity of passing the bill was emphasized by George Otis Smith, the director of the United States Geological Survey, Judge Finney, representing the Secretary of the Interior, J. D. Pennock, representing the Council of National Defense and others.

A digest of the bill is as follows:

Section 1 of the bill as reported by the House committee authorizes the Secretary of the Interior to issue prospecting permits to citizens of the United States covering areas of not to exceed 2560 acres in any one case for the purpose of exploring for potash on public lands. The life of such a permit is not exceeding two years. Land in and adjacent to Searles Lake, Cal., a very large known deposit of potash is excepted from the provisions of this section because of the fact that it is well known and is ready for development and requires no prospecting work to be done.

Section 2 authorizes the prospector under the permit described in section 1, upon his discovering a valuable deposit of potash, to obtain a patent for not exceeding one-fourth

of the land in the permit. This provision is designed to induce exploration for this valuable substance which might otherwise not be had, as these deposits, if found, are likely to be in arid desert basins, the prospecting of which is an arduous and expensive matter. Section 2 also provides that all the lands in any prospecting permit not so patented shall be subject to lease by the Secretary of the Interior in areas not exceeding 2,560 acres, conditioned upon the payment of moderate royalty. The leases are to be indeterminate, but the Secretary of the Interior is authorized to readjust the terms and conditions of such leases at the end of each 20-year period. Specific reference is made to the known deposits of potash in and adjacent to Searles Lake, and it is provided that they may be operated by the United States or may be leased by the Secretary under the terms and provisions of the act. There are now two small plants for the manufacture of potash located on the shores of this lake, and several other persons or corporations have indicated a willingness to take leases should this bill become a law. Railroad facilities are already provided, and early development of this deposit seems assured should the bill become a law. Provision is also made in this section for the leasing of certain known potash deposits in rock in Sweetwater County, Wyo. These lands also contain valuable deposits of coal, and the bill provides that the potash may be leased under the provisions of the act on condition that the coal be reserved to the United States.

Section 3 authorizes the Secretary to permit the use by any permittee or lessee of not exceeding 40 acres of unoccupied nonmineral public lands for camp sites or refining works in connection with any permit or lease. Section 4 directs the Secretary of the Interior to place in each permit appropriate provisions for its cancellation should the permittee fail to exercise due diligence in the prosecution of work.

Section 5 is designed to prevent monopoly or interlocking stockholding interests; limits any lessee from holding more than one-tenth interest in any other agency engaged in the sale or resale of potash products, and provides for appropriate forfeiture proceedings in the United States court for violation of the provisions of the section.

Section 6 directs the reservation in any permit or lease of a right for joint or several use of rights of way through lands permitted or leases for those persons working or developing other lands for similar deposits or for shipping or treating the products under authority of the United States, its lessees or permittees, or any other public purpose. The section also authorizes the Secretary, in his discretion, to dispose of the surface of the lands embraced in any lease under any applicable existing law, providing, however, that this must be determined before the offerings of a lease.



Section 7 directs that each lease shall have in it provisions necessary for the protection of the public interest and prevention of monopoly.

Section 8 authorizes the forfeiture of any lease through appropriate proceedings in the United States court whenever the lessee fails to comply with the provisions of the act, of the lease, or of general regulations in force at date of the lease.

Section 9 permits of the leasing of potassium deposits in lands of the United States disposed of under nonmineral laws, with a reservation of the potassium deposits.

Section 10 provides for the disposition of royalties and rentals under the act. They are to constitute a part of the reclamation fund for the irrigation of arid lands in the Western States, and upon return to the reclamation fund after such use 50 per cent is to go to the Treasury of the United States, the other 50 per cent to be paid to the State within the boundaries of which the deposits are or were located, the money to be used by the State for the construction and maintenance of public roads and schools.

Section 11 authorizes the Secretary of the Interior to make necessary rules and regulations to carry out the purposes of the act.

Section 12 protects existing valid claims made and maintained in compliance with the old placer-mining laws, and also stipulates that nothing in the act shall prevent the States or other local authorities from exercising any rights which they may have to levy and collect taxes upon improvements, outputs of the mine, or other rights or assets of any lessee.

Section 13 directs the Secretary of the Interior to incorporate in every lease issued a provision reserving to the President the right to regulate the price of all minerals extracted or sold from the leased premises, the price to be fixed so as to yield a fair and reasonable return to the lessee and to secure to the consumer any of the products at the lowest reasonable consistent price. A proviso to the section also vests in the President authority to regulate the disposal of the potassium products so as to secure their distribution and use wholly within the limits of the United States or its possessions.

For a number of years chemical experiments have been under way for the purpose of securing potash from the brines of Searles Lake at the lowest possible cost with the greatest maximum extraction of potash, and it is stated that the process now in use in a small way will effect this result; that should this bill be passed it is probable that a number of lessees will at once engage in the business of extracting potash from this brine, producing a supply which will meet to a large extent the demands of the United States for agricultural, commercial, and munition purposes, and that at a cost far below existing prices and more nearly consistent with the price obtaining prior to the war. The present time is peculiarly favorable for the

creation of a potash industry in the United States and this bill offers a golden opportunity for the utilization of known potash deposits in the time of urgent need.

In discussing the potash situation before the House Committee on Public Lands, George Ouis Smith, director of the United States Geological Survey, said:

"Before the war began we in the Geological Survey began to be interested in the making of potash, because of the fact that the prices were raised by the German Government. So, some 6 years ago we began a search for potash in the West. At that time the Geological Survey first reported on these Nebraska lake lands; and we sampled them; and we had analyses showing that there was a content of potash there, but under conditions then existing it would have been impossible to utilize the potash there because of the expense. Today the situation is somewhat different.

"Last year we produced ten times as much potash in this country as was produced the preceding year. Already in the 6 months of the year 1917 we have produced more potash than was produced during the whole of the year 1916. That seems an encouraging feature, until you begin to compare the total production which is expected for 1917 with the average amount imported previous to the outbreak of the war. If you make that comparison you will find that we are only producing something like 10 per cent of the nation's requirements.

"It is not simply a question whether the Government is short on potash. It is a fact that the nation is short on potash now, particularly for its use in fertilizers, and in many of the industries, such as glass making, soap making, the manufacture of dyes, and the tanning industry. Then, as you know, the metallurgical industry in the West uses large quantities of potassium salts. So there really is a shortage that must be met, so far as possible, from these local sources.

"I have referred to the Nebraska lakes. Yet have already asked some questions regarding the small lakes in the western part of the State of Nebraska. The brines there, under present prices, are sufficiently rich in potash to enable some four or five—I think last year there were five companies—to operate, and I believe four are producing potash out there this year. As it is at the present time, those brines, which were regarded as expensive to operate some 6 years ago, are now yielding about one-third of the production of potash in the United States. The production for the first 6 months of this year, as given by the Geological Survey, was 14,023 short tons of K<sub>2</sub>O. Of course, the weight of the brines and the salts is much greater than that, and the value of those 14,023 short tons of K<sub>2</sub>O is \$6,000,000.

"The lionite deposits of Utah and the potash that is reclaimed from cement fumes amounted to 1,867 short tons, and the amount



procured from culp amounted to 2,143 short tons. Then there are miscellaneous industrial wastes that are utilized, and the potash is recovered from them. Those wastes include such things as distillery slops and wool washings, and that amounts to over 2,000 tons, and then there are about 175 tons reported as being made from wood ashes.

"It is interesting to know that one company, a match company, has three plants where they were recovering potash, in the East, from the wool washings, and they were utilizing some culp on the Pacific coast, and they were also getting potash from the bitterns in Great Salt Lake.

"I think that is an index of the extent to which some of the industrial users of the potash are getting the amount they need in their business. The same is true of the manufacturers of explosives and of fertilizers. Several of the companies are interested in a number of projects."

Senator Pittman, in explaining the changes made in the bill in the Senate committee, said:

"The only distinction between this bill and the House bill is this: The House bill delegated authority to the Bureau of Mines to make any rules and regulations it saw fit to make in the matter. The Senate committee was not willing to delegate that authority. Therefore, in conjunction with the Bureau of Mines and the agents of the various powder companies, the committee worked out a definite set of laws as embraced in this amended bill.

"The real objection by the business interests of the country to the House bill was that it simply delegated the authority to make any rules and regulations that the bureau might see fit to make. This bill does not delegate that authority. It simply states that the institutions must have a license to carry on their business; and it is simply a method of preventing powder from getting into the hands of those who might use it for unlawful purposes by having a license check upon those who are entitled to use it."

Senator King of Utah objected to the bill in the following words:

"Some of its provisions are very objectionable to me. I do not think that any exigency exists at the present time sufficient to warrant the passage of the bill. It commits to the Federal Government the power to license small dealers in any form of explosives in the smallest cities or precincts of the United States. It superimposes the Federal authority upon the States and establishes a licensing system that certainly must be obnoxious to any person who has any idea as to the powers of the States to regulate their own internal affairs. No person can sell or purchase powder or any explosive without obtaining a Federal license. This will prove burdensome and oppressive."

The argument presented by Senator Brady for his stand against the bill is as follows:

"If the bill is a war measure, the subject matter with which it deals should be under the Secretary of War. Let the Secretary of War appoint the Director of the Bureau of Mines to do certain specific work, if he feels that he is capable of doing it and should do it; but during the time of war let us be big enough and broad enough to place authority where it can be used directly with consulting someone else. Wherever power is given in this bill to the Director of the Bureau of Mines, it should be placed in the hands of the Secretary of War; and that would be a wonderful improvement. The Secretary of War is the man who is responsible, in a way, for the explosives in this country.

"When we come to the question of exporting explosives, I ask, whoever heard of the Bureau of Mines in this country or in any other country on earth having control of the exportation of all explosives during a time of war? I say it is ridiculous, and that, if you are going to pass this bill, before you do so you should change Section 10 so as to give the authority to be granted to the Secretary of War, and not to the Director of the Bureau of Mines."

Senator Pittman met this argument in the following manner:

"I think possibly we have got down to one question now, and that is as to whether or not this power should be vested in the Secretary of War or in the Director of the Bureau of Mines. The duties performed by the Director of the Bureau of Mines are much broader than the Senator from Idaho at present seems to realize. The War Department was in consultation with the Bureau of Mines with regard to this very bill. The Secretary of War has certainly duties enough on his shoulders now without assuming any more, and I do not think he desires to assume any additional duties. As a matter of fact, the Bureau of Mines today, by direction of the Council of National Defense, of which the Secretary of War is chairman, has had delegated to it the function of making a study of explosives. The Bureau of Mines today is experimenting in large explosives. It is the function of the Bureau of Mines to know all about explosives."

#### REMBRANDT PEALE ADDED TO FUEL ADMINISTRATION STAFF

The official announcement of the appointment of Rembrandt Peale reads as follows:

"President Wilson has approved the appointment of Rembrandt Peale on the staff of Fuel Administrator Garfield.

"Mr. Peale has resigned the presidency of his coal companies in order to work with the Government in the management of the fuel problem of the country. His principal company is Peale, Peacock & Kerr, of Pennsylvania and New York, with its chief mines at St. Benedict, Cambria county, Pa."



# **GOVERNMENT SPECIALISTS WELL KNOWN TO MINING MEN**



*Photo by Harris & Ewing*

• L. H. DUSCHAK

L. H. Duschak, who is in charge of the Berkeley station of the Bureau of Mines, was born in Buffalo, N. Y. His early education was obtained in the public schools of that place, after which he attended the University of Michigan. He was graduated from the University of Michigan in 1904, where he specialized in chemistry. He took a post-graduate course in the Michigan institution, and later spent two years at Princeton, where he received a Ph.D degree. Following the completion of his course at Princeton, he was appointed to a place on the faculty, and for two years was an instructor in chemistry.

After two years' work as an instructor, Mr. Duschak undertook industrial work, and became research chemist with the Corning Glass Works, at Corning, N. Y. Following an extended experience at that plant, he joined the Bureau of Mines staff in 1912 as a chemical engineer. He was associated with F. G. Cottrell in the smelter fume investigation. He was associated with the Bureau of Mines activities at the Panama-Pacific Exposition, since which time he has been serving as superintendent of the Berkeley experimental station,

which is conducted in cooperation with the University of California.

At present Mr. Duschak is engaged in a special set of experiments of the problems confronting the quicksilver industry. In fact, the entire attention of the Berkeley station has been given over to this work.

## **OIL LAND LEASING BILL IS REPORTED FAVORABLY**

In reporting the oil land leasing bill to the Senate from the Public Lands Committee and recommending that it be passed, Senator Pittman says in the report:

"This is an emergency measure. The immediate increased production and supply of coal, oil and gasoline is absolutely essential to the successful conduct of our war. The truth of this statement should require the production of no proof by this committee.

"The coal situation has become so desperate that the Government has found it necessary to assume direct supervision through a coal administrator. We are threatened with being cut off from the power necessary to the production and manufacture of the sinews of war. Unless the condition is rapidly remedied, many of the great plants now manufacturing munitions of war will be seriously curtailed in their output, if not entirely closed down. As to this condition, it is immaterial whether it be caused by a shortage of coal or inadequacy of transportation. If the former, then the opening up of the 44,000,000 acres of land reserved by the Government as coal lands to the development of several thousand independent coal operators must greatly relieve such condition. If such condition, however, is due to the latter cause, then the local production of coal in the fourteen States wherein such coal lands are withdrawn from use will greatly relieve transportation.

"The increased production of oil, however, will not only relieve the burden upon the coal operators, but will do more than anything else to relieve the congestion in transportation which is in part caused by the necessity to move large quantities of coal.

"The oil situation, if possible, is more deplorable than that of coal. The demand for oil and its by-product, gasoline, is increasing at an enormous rate. Never before in the history of the country, and we hope, never again, will there be such a vital necessity for a sudden and enormous supply of both oil and gasoline. It will require the development to the maximum of every known supply of oil to carry out our war program with relation to our navy, motor vehicles and flying machines. Notwithstanding this tremendously increasing demand, the oil stocks of the country are decreasing. The report of the Bureau of Mines furnished to Mr. Bernard M. Baruch, chairman of the Committee on Raw Materials, Minerals and Metals of the Council of National Defense, and made a part of the



hearings upon this bill, shows that in 1916 the marketed production of oil was 296,290,000 barrels, and in 1917 (estimated) 286,990,000 barrels, being a decrease of 9,300,000 barrels in 1917.

"We must get oil now wherever we can get it and as fast as we can get it. It is better to let future wars take care of themselves than to lose the present one through dreams of far-off conservation, technical disputes as to methods and puerile bickerings as to jurisdiction between governmental bureaus. If production is prevented by withdrawals, then these withdrawals must be thrown open. If production is retarded by litigation, then this litigation must be compromised.

"No man in the United States understands the oil situation better than Mr. Edward L. Doheny. He is probably the largest individual oil operator in the world. He is in no way personally interested in any of the provisions of this bill. By reason of his vast knowledge of the subject, his unquestioned integrity and his unbiased and sound judgment, he was appointed by Governor Stephens of California as chairman of the committee on oil of the State council of defense and by Mr. Bernard M. Baruch as chairman of the Committee on Oil of the Council of National Defense. We respectfully urge most careful attention to some of the statements made by Mr. Doheny at the hearings upon the bill under consideration. Mr. Doheny said:

"The falling off of the production of the Mid-Continent field made the supply of gasoline and lubricating stock inadequate to meet the Eastern demands, and the prices of gasoline and lubricating oils went up, so that they ultimately drew on the California surplus. Up to two years ago California had a substantial surplus production over consumption. It had had production to the extent that the price of oil was down below a profitable point of production. Then, in the last eighteen months the price of oil in California has more than doubled, because of the falling off of the production to which I have referred, and also of the California production, which increased the demand for California oils. . . .

"There is no doubt but that everybody that has any influence at this time and in this situation ought to encourage development of oil wherever possible. The question where its development should be encouraged depends upon the likelihood of an increase being obtained in those places, for the reason suggested by me in answer to your former question, that oil-well supplies, especially tubing, are very difficult to get; in fact, so difficult to get that tubing should not be used except in places where there is almost a certainty of getting a good return in oil for the use of that tubing. If you think it would throw any light on the subject, I would be willing to give the reasoning on that point that I used with the Advisory Council.

"It is a very short statement. It is very

probable, however, that you have heard it in better words from other lips, but when asked by Mr. Baruch what regions I thought should be thrown open for development, I answered that I thought any place, no matter to whom it belonged, whether to a private individual, a corporation, or the Government, that would produce oil in the greatest quantity with respect both to the amount of time and money invested. Those should be the first places developed. For instance, in California, I have an immense amount of territory that I have acquired within a year, something like 50,000 acres of land. That land I acquired for oil purposes. I know that I can drill wells in great numbers that will each produce from 5 to 25 barrels per day. I have one area that will produce from 250 barrels a day up per well. I am confining all my work to that particular spot, on the theory that it takes as good a pipe line, as much time and experience, and so on, to drill an oil well from the surface down into the sands that will yield 10 barrels as to drill one that will yield 100 barrels a day. For that reason I am withdrawing, just for the purpose of economic operation, all my development at this time, to land that will give the greatest return for the time and supplies invested. In other words, I want to get, in the shortest possible time, the greatest return from every dollar invested. I think that, in this emergency, if there is any spot in the United States, or any number of spots, whether they belong to a private individual, a corporation, the Standard Oil or other company, that will produce more rapidly than a place that I, for instance, am developing, my attention, or the attention of others, should be called to it, and we should be urged in every way possible to develop the land that will yield the largest amount of oil, considering the amount of time and material used.

"I want to say that the use of oil in this emergency is going to be more vital to the interests of this country than any other one thing. The papers are telling about an appropriation of \$600,000,000 for aeroplanes. You must bear in mind that you cannot move an aeroplane one foot, unless you push it, without gasoline. It takes about 12 or 14 barrels of the average oil to produce one barrel of gasoline. To run 100,000 machines at even 1 gallon per day, considering that they may be idle nine-tenths of the time, will take about 30,000 barrels of oil a day; and that is in addition to what we use now. I am just mentioning this to show why I think that this committee, if it has any power, should require any individual or corporation to put at the service of the nation any lands that will produce oils more rapidly, and it should stop the use of casing on lands that will produce only a small amount of oil, wherever those lands are, if the fact is known to this committee. I suggest that that power should be used as to these lands because of the peril to the nation. You have got to have oil. Oil today is the essential of this



war. You cannot move without oil in these days. You need it for the aeroplanes, for the motor trucks, for the submarines, for the boats that chase the submarines, and eventually and finally, you need it for the warships themselves. They all need gasoline; they cannot start to work without it. If you start with gasoline, why, that comes out of the crude oil, and that crude oil comes out of the ground, and you necessarily have to have the tubing and casing to put in the ground.'

"There should be no question in the mind of any Senator of the necessity of this legislation. The bill is quite similar to two other bills that have passed the House of Representatives and one that passed the United States Senate."

## UNCERTAINTY SURROUNDS THE PYRITE SITUATION

### Capital Hesitates to Undertake Domestic Development in Face of Possible Increases in Imports and Uncertainty as to Disposition of Sulphur Reserve

Events have moved swiftly during the past month in both the pyrite and manganese situations, but much uncertainty still exists. It has become increasingly clear that capital cannot be induced to invest in pyrite operations unless there can be some assurance that the investments will not be rendered valueless by the arbitrary assignment of ships to bring pyrites from Spain. There is powerful pressure being brought to permit of normal imports, but this is being neutralized by equally powerful pressure in the interest of the development of a domestic supply.

Another feature of the situation which is tending to discourage capital from pyrites operations is the fact that great reserves of sulphur exist at the mines in Louisiana and Texas. If this reserve should be diverted into the acid making trade, it would of course interfere very decidedly with the demand for domestic pyrite. Regardless of these uncertainties, however, the production of pyrite is increasing and every effort is being made by the scientific bureaus of the Government to stimulate this industry and reduce as much as possible the risk involved by indicating more promising sources of supply. Much work is being done looking to the discovery of coal brasses.

Enough manganese has now been accumulated in the country to meet all needs for one year. The domestic production continues to increase. While only four States were producers of manganese in 1913, mines in twenty-two States are shipping this product in 1917. Fully 15 per cent of the 1917 needs for manganese could be supplied from domestic mines. Seventy-five operators will contribute to this year's output. This showing is the more remarkable when it is considered that less than 1 per cent of the country's needs was supplied before the war.

The steel companies are changing their practice so as to utilize alloys capable of being made from domestic ores, thus obviating the necessity of using only such alloys as must be made from imported ores. One plant making several grades of mild steel is reported not to have used a pound of ferromanganese in two years. The product is declared to be fully as good as heretofore and an increase in production has been shown. Thirty per cent alloys are being used in this case it is understood.

## LICENSES REQUIRED FOR ALL COAL EXPORTED

### All Permits Must Be Approved by the Fuel Administration.

Fuel Administrator Garfield on September 15 requested the Export Administrative board to allow no coal to be exported from the United States without specific license, and further that the board authorize no such licenses before notifying him of the application. This step was taken, the Fuel Administrator says, in order that he might keep in close touch with both the quantity and the destination of coal exports. Continuing, he said:

"The action is specifically for the purpose of protecting the northwest part of the United States, which has been complaining that it has not been receiving its fair share of the coal sent to Lake ports. An investigation by the Fuel Administrator substantiated this complaint. It was found that plenty of coal was reaching the Lake ports, but it was not getting through to the Northwest. In the period between August 24 and September 6 out of a total of 1,755,812 tons, 530,973 tons, or 30.2 per cent, had been shipped into Canada. This is far in excess of the proportion of Canadian exports by Lake boats in normal times.

"The Fuel Administration does not intend to cut off Canadian exports, but with this supervision it will be able to equalize the distribution of coal and see that the Northwest and Canada both get their fair shares."

C. S. Ross, of the United States Geological Survey, has been detailed to work in co-operation with the North Carolina State Survey in the making of an investigation of the manganese and pyrite deposits in that State.

W. C. Phelan, of the Bureau of Mines, is inspecting the manganese development which is under way in California.

A. T. Meyer has resigned his post as secretary to Van H. Manning, Director of the Bureau of Mines, to become chief clerk at the Lake Superior Experiment Station.

B. O. Pickard, assistant to the chief mining engineer of the Bureau of Mines, has returned from South Carolina, where he collected samples taken at various deposits of iron pyrite.

## SELECTION OF NITRATE PLANT SITE STILL PENDS

### War Department Finds Difficulty in Deciding Upon Exact Location and Further Delay Ensues.

Delay on the part of the War Department in reaching a decision as to the exact location of the nitrate plant has caused considerable concern on the part of many of those deeply interested in the nitrate situation. While the Secretary of War has approved southwestern Virginia as the general section in which the plant is to be located, difficulties have arisen in the selection of the exact place at which the plant is to be erected.

The matter came up for discussion in the House during the month and Representative Longworth, of Ohio, took occasion to express his gratification for decision of the War Department to give up any idea of utilizing water power in the production of nitrate. He condemned the activities of those attempting to use such means to exploit water power and was particularly bitter in his reference to the Muscle Shoals scheme.

Announcement was made recently by the War Department of its preparations for the production of nitrates in accordance with a report filed by the Nitrate Supply Committee. This report is given, in part, below. It is further stated that for the present the exact location of the proposed nitrate plant is withheld, but information concerning its location will be given as soon as a definite decision is reached. The work of supplying the machinery and materials needed for the plant is practically complete.

The Nitrate Supply Committee, appointed by the Secretary of War, was under authority granted in the national defense act for an investigation "to determine the best, cheapest and most available means for the production of nitrates and other products for munitions of war and useful in the manufacture of fertilizers and other products."

The general recommendations and report of the Nitrate Supply Committee are announced as follows:

"After a deliberate and careful consideration of all the matter and information at the disposal of the committee, it submits the following as its action:

"1. The committee, appreciating the offer of the General Chemical Company, recommends that the Government enter into negotiations to acquire the rights to use the synthetic ammonia process of that company.

"2. That, contingent upon satisfactory arrangements with the General Chemical Company, out of the \$20,000,000 nitrate supply appropriation such sum as may be needed, now estimated at \$3,000,000, be placed at the disposal of the War Department to be used in building a synthetic ammonia plant, employing the said process of the General Chemical Company, and of a capacity of 60,000

pounds of ammonia per twenty-four-hour day, said plant to be located in a region where land, water, coal and sulphuric acid are cheaply available, where good transportation facilities exist, and where the proposed new powder plant of the Government can be properly located. In the opinion of this committee, all of these conditions just enumerated are best fulfilled by a location in southwest Virginia or contiguous region.

"3. That out of the \$20,000,000 nitrate supply appropriation an amount now estimated at \$600,000, or as much as may be needed, be placed at the disposal of the War Department to be used in building a plant for the oxidation of ammonia to nitric acid and the concentration of nitric acid of a capacity equivalent to 24,000 pounds of 100 per cent nitric acid in a twenty-four-hour day, said plant to be located in the neighborhood of the aforesaid synthetic ammonia plant and the proposed new powder plant of the Government.

"4. That the War Department proceed at the earliest practical date with the construction of the oxidation plant, and, contingent upon a satisfactory arrangement with the General Chemical Company, also with the synthetic ammonia plant, and that the Government give such priority orders as will secure from contractors prompt delivery of the materials and rapid construction of the structure and machinery needed for these plants.

"5. The committee, appreciating the offer of the Nitrogen Products Company, granting in this country to the Government, under certain conditions, the rights to use the so-called Bucher process for the production of sodium cyanide and ammonia, recommends that a form of contract, drawn with the advice of the legal authorities of the Government, such as to give that company no guarantee or exclusive rights in the process or in its future development beyond those which the company's own patents give to it, be entered into with the Nitrogen Products Company, and that experimentation looking toward the industrial development of the Bucher process for the production of ammonia be at once proceeded with. And, further, that, contingent upon a satisfactory arrangement with the Nitrogen Products Company, a sum not to exceed \$200,000 be allotted for this purpose out of the \$20,000,000 nitrate supply appropriation.

"6. That out of the \$20,000,000 nitrate supply appropriation \$100,000 be made available for the active prosecution of investigations of processes for the industrial production of nitrogen compounds useful in the manufacture of explosives or of fertilizers, and that these investigations be planned and supervised by the War Department.

"7. That in order to increase the production of ammonia and toluol, the Government promote the installation of by-product coke ovens by directing that priority be given in



the production, delivery and transportation of the materials and parts needed in their construction.

"8. That the decision as to more extensive installation of nitrogen fixation processes and water-power development in connection with them be postponed until the plants above recommended are in operation, or until further need arises.

"9. While the preceding recommendations include all the measures that can now judiciously be taken for the fixation of nitrogen and the oxidation of ammonia, it is the opinion of the committee that the immediate accumulation and the permanent maintenance of an ample reserve, not less than 500,000 tons, of Chile saltpeter is the measure most urgently necessary."

The Nitrate Supply Committee comprised the following army and navy officers, scientists, and engineers:

Brig. Gen. William Crozier, Chief of Ordnance, War Department; Rear Admiral Ralph Earle, Chief of the Bureau of Ordnance, Navy Department; Brig. Gen. William M. Black, Chief of Engineers, U. S. A.; F. W. Brown, Bureau of Soils, Department of Agriculture; Leo H. Baekeland, Yonkers, N. Y.; Gano Dunn, New York City; Charles H. Herty, New York City; William F. Hillebrand, Bureau of Standards, Department of Commerce; Arthur A. Noyes, Institute of Technology, Boston, Mass.; Charles L. Parsons, Bureau of Mines, Interior Department, and Willis R. Whitney, Schenectady, N. Y.

### **E. S. BASTIN RETURNS AFTER STUDY OF CHILEAN GEOLOGY**

After 8 months spent in studying the geology of the region in which the Chilean mines of the Braden Copper Company are situated, Edwin S. Bastin has returned to his desk in the Geological Survey. The Braden mines are near Rancagua, in central Chile. It is one of the largest underground copper operations in the world. The workings are above the timber line on the western slope of the Andes.

Last May, Mr. Bastin was joined by Prof. Waldemar Lindgren, of the Massachusetts Institute of Technology. Professor Lindgren spent a month at the Braden mine and with Mr. Bastin went to northern Chile, where another month was spent in an examination of the large copper mines at Chuquimata, which is owned by the same interest as operate the mines at Rancagua. The operation at Chuquimata is conducted on the open cut system. It is located on the edge of the great nitrate pampas and shares the bad climate of that region.

Mr. Bastin reports that mining companies in Chile are experiencing serious difficulties in securing supplies. Prices are almost prohibitive on many articles by the time they reach a mine in the mountains of that Republic. The Braden property, however, is being worked on a capacity basis and a large new smelter is

being erected to take care of the increase in output. Large power resources are being developed on the property. Tunnels are being driven so as to permit of tailings disposal in an adjoining valley.

A Chilean commission is now considering the matter of an export tax on copper and other minerals. This fact is causing no uneasiness among the miners, Mr. Bastin states, since the historic policy of the Chilean Government has been to do nothing which would discourage the inflow of foreign capital.

While at the Braden properties, Mr. Bastin organized a geological branch of the mining organization which will proceed with the work which he started. This department has been placed in charge of LeRoy LeDuc, a graduate of the geological department of the University of Chicago.

S. A. Taylor, of Pittsburgh, Pa., was in Washington last month on business with the Fuel Administration.

### **Two Ways to Look at It**

One day early in May, 1917, the general merchant of a small south Texas town showed a farmer a buggy, priced at \$90, and the farmer objected because twenty years before his father had bought one just like it for \$60.

The merchant looked up the sale, and found that the father had turned in as payment for the \$60 buggy 12 tons of cottonseed. The merchant figured a while, then told the son to deliver him 12 tons of cottonseed and he would give him:

- One \$90.00 buggy.
- One \$75.00 wagon.
- One \$40.00 cultivator.
- One \$60.00 planter.
- One \$100.00 Victrola.
- One \$35.00 watch.
- One \$20.00 suit.
- \$300.00 Liberty Bonds.

The farmer paid cash for the buggy and is holding his cottonseed for a higher price.

### **NATIONAL COAL ASSOCIATION COMPLETES ITS ORGANIZATION**

Active work on the part of the National Coal Association will begin at once. W. K. Field, of the Pittsburgh Coal Company, has been chosen president of the new organization of mine operators. J. D. A. Morrow, formerly assistant secretary of the Federal Trade Commission, was selected for the office of general secretary. The vice-president and treasurer of the Association are J. H. Wheelwright and Geo. H. Barker, respectively.

The organization was perfected after a lengthy conference with the fuel administrator, who sees in the Association an agency which will be of great aid in the work he has in hand.

# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## POWER WITHOUT RESPONSIBILITY

The world's greatest catastrophe has largely been brought about by the possession of great power in the hands of one who felt no responsibility for its proper exercise. The great movement toward democratic government in the world is for the purpose of harnessing with responsibility those in authority.

Up to the very recent past every individual in this country was legally responsible for the natural results of his premeditated acts. The enactment of the Clayton Bill by Congress created the first exception to that rule. Large bodies of men engaged in a strike or a rebellion against authority have not always been held accountable largely because personal responsibility could not be definitely fixed. The decision in the Danbury Hatters' case made effective a principle which, in some instances, had not been theretofore enforced. The final decision in this case was reached after many years of bitter litigation. The enactment of the Clayton Bill by Congress nullified the principle embodied in the ruling of the court, and legalized acts which, if performed by other than certain organizations, would be illegal.

THE MINING CONGRESS JOURNAL believes that the most important question which faces the American people during the years to come is that which relates to the relation of labor and capital. It does not believe that this problem may ever reach solution until contracts between the respective parties shall be held

inviolable, and that either party violating its contract shall be held legally responsible for the damages which naturally follow such violation.

The average wage earner has not thought of violating his contract with the grocer from whom he buys his provisions, nor other people with whom he does business. His conception of right and wrong in other matters are as acute as those of other people, but his wage contract not only is disregarded when his interest will be served, but he refuses to be put in a position where the contract can be enforced against him. The respect which should be given to labor organizations can never be hoped for until such organizations are ready to assume responsibility. Many people have urged incorporation of all labor organizations as one of the essentials to a proper solution of the great labor question. Surely organizations powerful enough to make effective an ultimatum to the Government ought not to be without responsibility to the public.

The present coal situation most forcibly illustrates this necessity. The nation is now involved in a world struggle so stupendous that every atom of its power is demanded. Coal is one of the absolute necessities. At a time when a coal famine is threatened; when not only the manufacture of war munitions and supplies and their transportation to the soldiers at the front is hindered, but the poor people of our great cities are without fuel; at such a time, concerted action by large bodies of men shut off completely in large districts the already in-



adequate supply of coal. This is in violation of contracts solemnly entered into in their behalf by their duly-selected agents, and in defiance of the orders of their officers.

When President John P. White, and his official board, of the U. M. W. of A., carry out the wishes of their members, their authority is recognized, but when they refuse to be parties to a hold up of their country in time of extremity they are repudiated. This irresponsible combination of power made immune from responsibility by the Clayton Bill, fastens its talons in the throat of the nation and endangers its soldiers at the front, while its demands are enforced. Surely it is time that labor as well as capital shall be conscripted for service, and a time when equality before the law shall be the right and the duty of every American citizen; equality of opportunity and equality of responsibility. Power without responsibility should not be tolerated in a free country.

This is not a new question, but it is a question deserving of continued agitation until every man who expects the protection of the law shall be willing to be governed in all respects by the same law to which he looks for protection.

#### ASSESSMENT WORK FOR 1917 AND 1918

The adoption by Congress of S. J. Res. 78, relieves mining claim owners of the requirement to do assessment work during the years 1917 and 1918. Those who desire to take advantage of this Resolution will be required to file a notice of their intention to hold their claims under the provisions of the law in the office where the location certificate is recorded. No particular form of notice is required, but for the convenience of our members a suitable form is given, together with the text of the resolution. Acknowledgment before a notary is not necessary, but is recommended in order that a certified copy may be used in evidence in case of loss of the original.

The resolution, as adopted by Congress, reads:

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,* That in order that labor may be most effectively used in raising and producing those things needed in the prosecution of the present war with Germany, that the provision of section twenty-three hundred and twenty-four of the Revised Statutes of the United States which requires on each mining claim located, and until a patent has been issued therefor, not less than \$100 worth of labor to be performed or improvements to be made during each year, be, and the same is hereby, suspended during the years nineteen hundred and seventeen and nineteen hundred and eighteen: *Provided*, That every claimant of any such mining claim in order to obtain the benefits of this resolution shall file or cause to be filed in the office where the location notice or certificate is recorded on or before December thirty-first of each of the years nineteen hundred and seventeen and nineteen hundred and eighteen, a notice of his desire to hold said mining claim under this resolution: *Provided further*, That this resolution shall not apply to oil placer locations or claims.

This resolution shall not be deemed to amend or repeal the public resolution entitled "Joint resolution to relieve the owners of mining claims who have been mustered into the military or naval service of the United States as officers or enlisted men from performing assessment work during the term of such service," approved July seventeenth, nineteen hundred and seventeen.

A convenient form of notice of intent to hold a lode mining claim is as follows:

Notice is hereby given that the undersigned desire and intend to hold the.....  
Lode Mining Claim, and the.....  
Lode Mining Claim, and .....  
.....  
all situated in the.....mining district,  
.....county, State of..... as  
more fully described in location certificate, recorded in book....., page....., in the office of the clerk and recorder of said county, under the provisions of Public Resolution No. 12, Sixty-fifth Congress of the United States, being Senate Joint Resolution No. 78, To Suspend the Requirements of Annual Assessment Work on Mining Claims During the Years 1917 and 1918. Approved October 5, 1917.

Witness:

County of..... }  
State of..... } ss.

On this.....day of..... personally appeared before me, a Notary Public in and for said county and State, ....., who duly acknowledged his signature to the above document for the purposes therein set forth.

.....Notary Public.  
(Seal)

### A NEW ARBITRATION IDEA

From the Clifton district of Arizona comes a proposition advanced by the striking miners for the purpose of bringing to a termination the present strike troubles in that district. It is proposed that the mining companies shall select one arbitrator, Mr. Samuel Gompers another, and President Wilson shall appoint a third, the findings of this arbitration board to be final. It is reported that the men are willing to agree to this proposition, but that the mining companies have not yet expressed a willingness to likewise agree. The difficulties of the situation are in the fear that the third arbitrator, to be chosen by the President of the United States, might not be a fair umpire as between the two other members each of whom would represent one side of the controversy. Under ordinary conditions the President would be expected to confer with that member of his Cabinet who directs the destinies of the Labor Department in view of the fact that this is a labor question which is to be considered. With all due respect to the Secretary of Labor, it would seem to be as hopeless to expect from him the appointment of a member in whom the operators would place confidence as it would to expect the operators to select a man who would be satisfactory to the striking miners.

Perhaps no one man did more for the creation of the immense power of the United Mine Workers of America than did Mr. Wilson, the present Secretary of Labor. It would be too much to expect, no matter how fair Mr. Wilson endeavored to be, that his judgment and his action could be accepted as unbiased by that party to a controversy against which his life effort has been directed.

### RAILROAD VALUATION

The official organ of the Denver Civic and Commercial Associations, the Commercial, urges a suspension by the Government of its project of making a physical valuation of the railroads.

"Begun four years ago," says the Commercial, "the valuation procedure has

made virtually no headway. A fair valuation three years ago is not a fair valuation today. Figuring increases in cost, from the smallest spike to the largest locomotive, and otherwise bringing data up to date will require stupendous work on the part of the roads.

"Meanwhile, engineering talent in use in this vastly expensive undertaking is needed in France. Aside from the millions in money that is being applied, the time of 6,500 men is being taken up. Fifteen hundred of these are in the Government service and 5,000 are employed by the railroads. With this, the force is pitifully insufficient. Men are constantly leaving to undergo enlistment and draft, and others are continually seeking more remunerative positions. Why not suspend valuation proceedings at least for the duration of the war? In all, too many quarters where judgment is reliable, doubt is expressed whether the valuation ever will be worth anything, even if it is ever finished."

THE MINING CONGRESS JOURNAL fully approves the recommendation of the Commercial, not only as a war measure for the conservation of energy sadly needed in other fields of endeavor, but because transportation rates never were and never can be equitably based upon the value of the transportation system.

### COMPULSORY ARBITRATION UNNECESSARY

Arbitration to be successful must start out with a faith on the part of the contesting factions that the arbitration board as a whole will deal fairly in the premises. Without this belief there can be no voluntary arbitration. Without this belief there should be no compulsory arbitration. Without this belief on the part of both parties to a controversy there can be no reasonable hope that a controversy would be settled permanently. An arbitration board must enter upon its task as does a court of justice. The value of every judicial determination where the fairness of the judge is brought into question is of doubtful value, and a continued questioning of the integrity of any



court will, in the end, break down its power of public service.

There are instances where a vicious organized effort has succeeded in so thoroughly discrediting an upright judge as to defile his most righteous judgments. Perhaps the only cure for this is publicity, and even this will frequently fail. In the end, however, there is no better method of preserving public order and punishing crime than through the judicial branch of the Government service.

THE MINING CONGRESS JOURNAL believes every dispute which affects the public interest should be settled by the rule of reason and not by force. It believes that strikes should be declared unlawful until after a public investigation by an unbiased board shall have opportunity to advise the public of the exact issues involved in the strike. It believes that in the end this course would adjust and bring about the settlement of so many labor disputes that there would be no need of compulsory arbitration. Few strikes have ever been won which did not command public sympathy. A strike which is not justified by the public should not win.

#### DEALERS' PROFITS UNDER THE LEVER BILL

In the effort of the Federal Government to limit prices to a fair margin of profit to all those concerned in the production and distribution of coal, Dr. Garfield has issued an order to the effect that those companies which have established their own selling agencies will not be permitted to add to the price of the coal at the pit mouth the 15 cents per ton which the Fuel Administration has allowed as the total charge which may be made for the handling of coal. This order seems to create a different price in the market of 15 cents per ton, and may have two different results. If coal was plentiful it would drive the independent dealers out of business, in that coal could be purchased from the companies having their own selling agencies at 15 cents per ton cheaper than it could from independent dealers. The other result

is to force the companies maintaining their own agencies to sell their coal for 15 cents less than independent agencies are permitted to charge. It is almost as difficult to anticipate the working out of this confusing order as it is to figure out how a coal mining company can escape the payment of interest upon its bonded indebtedness in order that it may sell its coal for less than the cost of production.

The order of the Fuel Administration is in the following language:

"Operators who maintain their own sales department, whether in their own name or under a separate name, and dispose of coal directly to the dealer or consumer, shall not charge a jobber commission. A jobber must be entirely independent of the operator, in fact as well as in name, in order to be entitled to charge a jobber's commission."

This ruling must result either in breaking down the sales agencies of the producing companies; in requiring jobbers to handle coal without profit; or in having coal sold in the same market at different prices.

#### THE ONE WEAKNESS

There seems to be but one vital element of weakness in the campaign looking to the prompt fulfillment of the duties which this nation has undertaken in its fight against Prussian autocracy. Our manufacturers, our mine operators, our farmers, all have promptly responded to the nation's call and are meeting every responsibility which has been placed upon them. The one element of weakness lies in the fact that labor unions violate their contracts with impunity. Any stoppage of operations in the coal mines of the country in the face of a great coal shortage in express violation of accepted contracts, is a violation of every sentiment of public duty, and a crime against the nation.

It is high time that President Wilson's suggestion of last year, that legislation should be enacted by which the "Concerted action of powerful bodies of men shall not be permitted to stop the industrial processes of the nation." It is high time that law shall be enacted which

will penalize those who conspire together to perform acts which endanger the safety of our troops in the trenches, and which interfere materially with the great task which this nation has undertaken, and which will inevitably bring want and suffering to thousands of poor people in our great cities during the coming winter. Any labor strike during this time in lines of work which are essential to the nation's success is indefensible. When an honest effort is being made to adjust the difficulties in the speediest method possible, a strike is worse than a crime. We repeat from an editorial in the October MINING CONGRESS JOURNAL, "It is high time that the drastic authority which has been placed with the Administration shall be exercised without discrimination against both capital and labor."

## ANNUAL MEETING OF MEMBERS

The following letter will be sent to the members of the American Mining Congress immediately after the report of the Nominating Committee has been made:

To the Members of the American Mining Congress:

A meeting of the members of the American Mining Congress is hereby called to meet at Hotel Astor, New York City, November 15, 1917, for the purpose of electing five (5) directors to succeed Messrs. Walter Douglas, Carl Scholz, S. A. Taylor, Charles S. Keith and L. A. Friedman, whose terms of office expire; one director for a term of one year to fill vacancy, and for the transaction of such other business as may properly come before said meeting.

In view of the fact that a large percentage of the membership cannot be expected to attend a meeting except where such is held at the time of a convention, and that it has been decided not to hold a convention during the current year, it has been thought wise to request the members to express by letter vote their choice of candidates to fill the vacancies on the Board of Directors.

Our By-Laws make the following provision:

### ARTICLE V

Sec. 3. For the purpose of facilitating the selection of directors, there shall be elected at the annual meeting of the members, a committee of five members to be known as a Nominating Committee, whose duty it shall be to present to the members for their consideration the names of such persons as such Committee may deem advisable to act as directors for the ensuing year.

In order that the wishes of our members may be known as to their choice of directors, and, at the same time, prevent such a scattering of votes as might result in no candidate having a majority of the votes, President Douglas has appointed a Nominating Committee consisting of Messrs. D. W. Brunton, of Denver; E. B. Kirby, of New York; W. G. Swart, of Duluth; E. T. Bent, of Chicago, and S. B. Thorne, of New York.

This Committee has endeavored to make a list of nominees which will fairly represent the different branches of mining as well as the geographic divisions of the country.

Our by-laws provide that the election shall be either in person or by written proxy, and we are enclosing you postal card proxy. The nominations listed are offered to you as a suggestion only, and you are at liberty to instruct your proxy to vote for these or any others whom you desire to vote for, for places upon the Board of Directors.

Will you kindly execute and return, at your earliest convenience, the Proxy enclosed? It will be necessary so that a majority of the members will be represented by proxy in order to make legal the election. Should you be able to be present at the meeting, the proxy may be withdrawn.

Trusting that you will give this matter your early attention, and that the facts stated are sufficient upon which to base a proper conclusion, we are, very respectfully yours,

THE AMERICAN MINING CONGRESS.

Immediately after the membership meeting, the Board of Directors will hold a meeting to which the members present will be invited and a full discussion of the work of the Congress and plans for broadening its work in the future will be given careful consideration. All who believe in the work of the American Mining Congress, whether members or not are invited to attend this meeting and lend their assistance in making the organization more fully representative of every branch of mining in order that the influence of the mining industry as a whole may be marshalled in support of those measures which will benefit the whole industry.

## NATIONAL COAL CONVENTION

A meeting of the National Coal Association was held at the William Penn Hotel, Pittsburgh, on Tuesday, October 23. The attendance numbered over fifteen hundred from practically all the coal producing States. President W. K. Field presided at the meeting. Addresses



were made by Dr. H. A. Garfield, Fuel Administrator of the United States; by J. D. A. Morrow, general secretary of the organization; by Arthur Hale, chairman of the Transportation Committee; by J. G. Puterbaugh, president of the McAlester Fuel Company, of Oklahoma; by John P. Reese, general manager of the Chicago, Milwaukee & St. Paul Railroad mining properties of Illinois; by J. B. L. Hornberger, auditor of the Pittsburgh Coal Company; by Harry N. Taylor, vice-president of the Citizens Coal and Coke Company, of Kansas City; and by T. L. Lewis, secretary of the Splint Gas Coal Association, of Charleston, W. Va.

Mr. F. H. Knight, of New Bethlehem, Pa., offered a resolution, which was adopted with but one dissenting vote, asking that the President of the United States, as a war measure, shall issue an order prohibiting all saloons within five miles of any coal mine.

State Senator John L. Hatfield, of Morgantown, W. Va., introduced a resolution intended to bring before the convention the question of the prices fixed by the President for the sale of coal, which met with considerable applause. This resolution was ruled out of order by President Field, who stated that discussion of the question of prices would not be allowed. At this juncture Mr. Lewis offered a motion, which was adopted, that all resolutions should be referred to the Board of Directors without discussion.

Dr. Garfield's address was in part as follows:

"It is indeed a great pleasure for me to come here to speak to such a body of men as you. It is indeed a great pleasure at any time to speak to a great body of American citizens.

"While I recognize that the immense gathering before me represents only the bituminous coal industry, I realize it is only part of a vast company, every man of whom may be relied upon as American citizens to do his duty.

"From the reports of the last few days I believe, with equal sincerity, the great host of miners and laborers in the

mines may be relied upon to do their duty as American citizens.

"In a time like this we need action, but action to be wise must always be based on careful consideration of practical measures. From the program of your conference I can see that you are called upon to consider measures immeasurably practical.

"I believe that I am invited here not only to meet you who represent a great industry, but also to satisfy your curiosity of the man who is called upon to touch intimately the industry in which you are vitally interested.

"There are three main aspects of the situation at this time, each one related to the other. They are coal, the people and the war. To put it in another way, they are the relation of the coal industry to the war and the attitude of those engaged in the coal industry to the people and the war.

"I do not believe your attitude is different from the attitude of those everywhere in this United States. The citizens of this nation can always be depended upon to be united in any action the nation is forced to take.

#### THE TIME FOR ACTION

"The time has come at last for action and the citizens of the nation are united to take that action. I mean to say the people of the nation and the nation have reached the point where there must be effective cooperation of all elements which make up the nation's life. This time for action comes only after the majority of the nation has spoken through their accredited representatives. We will go forward as a united people. The fact that we are able to go forward as a united people is the genius of the Anglo-Saxon people. The American people would have departed from their heritage if they did not unite in this cause of war.

"In former wars only the people and the war were concerned. In this great conflict, it is not only the people and the war that are concerned, but the industries of the nation. This is the third element that has been added in this war. As we progress, industry has become

more and more an item in civilization and war. It is a vital item when it is used as a means to an end and not as an end in itself.

"I shall proceed in such fashion as will produce for the United States, according to the wisdom that I am able to collect from my advisers all over the country, and from the wisdom which I believe you will willingly contribute also, all the coal that we have a right to expect, and more; I propose so to carry it on that coal shall go from the mine to the home and to the factory and to the Government of the United States in larger quantities than it ever went before.

"Now, gentlemen, if I have a request to make of you, it is this, and yet I hesitate to put it in the form of a request, because from what Mr. Field and others have told me, I know already the temper of this assembly, but I would request none the less, that you, as a body of citizens engaged in the mining industry, set aside any differences which may exist in your minds, and to put yourselves solidly, loyally, enthusiastically, with all that means, by way of sacrifice, behind the President.

"It is perfectly obvious that if you are thinking simply of your own interests as operators, you will think of the return, the profit to be secured for the coal that is mined; but as operators you do not forget, you cannot forget in the face of the civilization set up in our country, the interests of those who will use the coal, whether it be the interest of the domestic consumer or of the great factory turning out the commerce that rides upon the seas and goes into all parts of the world. Furthermore, you cannot forget that the interests of the people united and expressed in our government must necessarily be your interests for the time being. You cannot consider the question of profit in coal without considering the effect of that profit in coal on the Government of the United States and on its program of action in the present emergency.

"I am not saying these things, gentlemen, because I think you need to have them said, but simply to indicate to you

how the matter lies in my own mind, and because I believe that as I think of it so you think of it. The reading public, at any rate that large section of people who take opinion ready made, without enough thought concerning what they think to entitle them to be called the enlightened part of the public, are all too apt, when they discover great profits anywhere, to reach the conclusion that those who made the great profits or control them are somehow robbing people who otherwise would share those profits.

"In the same way those who labor in the mines, if they consider only their own interests, would think only of the wage return, not of the people who in the end must bear the burden of paying those wages and of the Government which those wages, in one form or another, must support. Here again the leaders, or enlightened opinion, will guide, and, indeed, today are guiding the great body of the wage earners in the mines to appreciate the full force and effect of anything which puts a clog upon the machinery of Government in the present crisis. As a generation of men we have been trained in the arts of peace. We have come to think of our Constitution as an instrument protecting the life, liberty and pursuits of happiness of each one of us. We not only regard with suspicion, but we resent suggestions that government can reach over and lay violent hands upon us or upon our possessions. But the same men who, in their wisdom, framed the Constitution of the United States as an instrument for our use in times of peace, also made provision for a drastic centralization of power in time of war, and I need not again remind you we are a people at war. Is it more violent that government should reach its strong and powerful arm into the household and take out of the household the son and set him in a place of danger and demand of the family, as well as the young man, the sacrifice of his life, if necessary, for the maintenance of a principle which our President has set up and in which we believe? Is it, I say, more drastic that government should do that than that government should also



reach its arm over into our factory and our counting house and say to us, 'We take also so much of your wealth, so much of your industry?' The government has a right in time of war to demand all of these."

Following Dr. Garfield's address, Mr. A. M. Ogle, of Terre Haute, Ind., offered a resolution which was unanimously adopted, pledging the loyal cooperation of the National Coal Association to the Fuel Administration and to the Government. In offering this resolution, Mr. Ogle stated that he had said good-bye to three brothers on their way to France, and felt it the duty of those remaining behind to stand by the Administration in every possible way.

Space will not permit any extended reference to the other able addresses delivered. Special attention was given the very able and timely address of Mr. Reese, who, outlining briefly his own life experience as a coal miner and a miners' union official, and the fact that a number of his immediate relatives were now coal miners, as special reasons why he would not do injustice to the labor unions. Mr. Reese paid a deserved and proper tribute to the loyalty and good intentions of the great majority of coal miners, and scored, without mercy, the 15 per cent whose refusal to work at this time is imperiling the nation's safety, and urged that the Government should commandeer American labor and make it run the mines.

#### GOVERNMENT ACID PLANT

The selection of Sheffield, Ala., as the site of the first of the ammonia and nitric acid plants to be constructed by the Government is a wise selection. It is at the source of an enormous possible water power development. It is near large deposits of mineral substances which may or may not be utilized in the manufacture of nitric acid. Whether the newer developments in which chemical action and power are relied upon or whether power alone will be utilized, the plant is so located as to adapt itself to either process of manufacture.

#### LESHER

Times of stress bring into prominence those who possess unusual ability. An example of this is the work being done by C. E. Leshner, the geologist who is in charge of coal statistics for the United States Geological Survey. Exceptional demands have been made upon this branch of the Survey's work by the Fuel Administration, the War Industries Board, the Council of National Defense, the committee on coal production, and by the public in general. Not only has Mr. Leshner proven equal to the exacting demands that have been made upon him, but he has convinced all those with whom he has come in contact that more than being an excellent statistician he has a grasp upon the coal industry that causes his opinion to be sought by those charged with the heaviest responsibilities in meeting the unprecedented demands which are being made upon the fuel resources of the United States.

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#### Report on Nickel in Ontario

Without question the most thorough inquiry into the resources, industries and capacities of the Province of Ontario, in connection with nickel and its ores, is the report of the Royal Ontario Nickel Commission which just has appeared in book form. The report is exhaustive, is accompanied with maps, and is so systematically divided as to make it an essential to the library of every mining man who is interested in nickel production.

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#### To Report on Bad Ammunition

A report on the failure of certain ammunition manufactured at the Frankfort arsenal is about to be submitted to the War Department by the board appointed to investigate this matter. The board consists of Dr. C. L. Parsons, chief of the division of mining technology of the United States Bureau of Mines; Colonel Wirt Robinson, professor of chemistry at the United States Military Academy; and William H. Walker, of the Massachusetts Institute of Technology.

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#### Plans Completed

Designs for coal cleaning plants which will be erected by the Government in Alaska have been completed by George Watkin Evans.

## FORTY-FIVE CENTS ADDED TO THE COAL SCHEDULE

### President Issues Order on Fuel Administrator's Recommendation to Cover Increases in Wage Scale

An increase of 45 cents has been allowed on the President's schedule of coal prices. The entire matter is explained in the following letter from the Fuel Administrator to the President:

"It is my understanding that in fixing provisional prices for the sale of coal, it was intended to allow a fair profit to the operators. The public does not desire, nor is it necessary to meet the present emergency, that the coal industry should be asked to make more of a sacrifice than may reasonably be required of all staple industries. Exorbitant profits only have been the subject of concern. It needs no argument to justify Congressional and Executive action against profiteering, when the people of the United States are called upon to make unusual sacrifices.

"As a result of the conference held in Washington between the operators and the miners of the Central field, an agreement was reached on the 6th of October providing, among other things, an increase of wages as follows:

"An advance of 10 cents per ton to miners.

"Advances ranging from 75 cents to \$1.40 per day to laborers.

"An advance of 15 per cent for yardage and dead work.

"This will result in an increase to miners of 50 per cent and to the best paid laborers of 78 per cent over the wages of April 1, 1914. These increases are not in excess of the advance in cost of living for that period.

"It is obvious that these advances in wages must be taken either from the operator or the consumer. On the assumption that the prices fixed yielded a fair profit to the operator, it is clear that if this increase of wages is to fall entirely upon the operators their profits will no longer be fair, unless the result of the increase bears an insignificant relation to those profits. This question was submitted to me, as Fuel Administrator. It is not possible to estimate the exact effect of the proposed increases upon the prices fixed. But the experts of the Federal Trade Commission and of the Fuel Administration have made as careful computation as the data in hand permit. I have asked these gentlemen to exclude from their computations any allowance which could properly be regarded as an indirect increase of the profits of the operators, and to make their calculations with the sole object in view of covering the increase in wages by interpreting the above proposals in terms of the prices fixed by you, that is to say, to advise me how many cents per ton on coal produced the proposed wage increases mean.

"In reaching the conclusion that the prices of coal at the mine should be increased to substantially cover these wage increases, I have been influenced particularly by the provisions of the agreement intended to secure an increased and uninterrupted production of coal.

"Under the provisions of the draft law, miners are not excluded as a class. Considerable inroads have been made, as a result of the first draft, upon mine labor. Moreover, the conditions surrounding the industry in ordinary times account for the fact that the average number of days work in the year has been from 200 to 230 only. They also, in part, account for the fact that the average hours of labor per day have fallen considerably below the 8 hours stipulated in wage agreements. It is the deliberate judgment of the best informed among the representatives of the Miners' Union, that if the miners now at work should labor in the mines 8 hours during even five days of the week, there would be no shortage of coal. It is the purpose of the proposed supplemental agreement to secure an approximation at least of this result by means of fines automatically collected. These fines are quite distinct from the penalizing fines sometimes attempted to be imposed by employers for their own benefit.

"In this connection, I beg to call special attention to the fourth item of the proposed supplemental agreement, namely, that

"Subject to the next Biennial Convention of the United Mine Workers of America, the Mine Workers' representatives agree that the present contract be extended during the continuation of the war, and not to exceed two years from April 1, 1918."

"I am assured that the next Biennial Convention will loyally and patriotically confirm this provision. I believe you may confidently rely upon the assurances of the representatives of the Union upon this point.

"In view of the foregoing considerations, I respectfully recommend that the prices fixed by your proclamation of August 21, and such modifications as have been made pursuant to your order of August 23, appointing a Fuel Administrator, for the sale of bituminous coal at the mines, be uniformly increased in the sum of 45 cents per ton, subject, however, to the following exceptions:

"(1) This increase in prices shall not apply to any coal sold at the mine under an existing contract containing a provision for an increase in the price of coal thereunder in case of an increase in wages paid to miners.

"(2) This increase in prices shall not apply in any district in which the operators and miners fail to agree upon a penalty provision, satisfactory to the Fuel Administrator, for the automatic collection of fines in the spirit of the agreement entered into between the operators and miners at Washington, October 6, 1917.

"For your information, I attach hereto a copy of the supplemental agreement of October 6, 1917, between the operators and the miners of the Central Competitive Fields com-



posed of western Pennsylvania, Ohio, Indiana, and Illinois."

The President then issued the following order:

"The scale of prices prescribed August 21, 1917, by the President of the United States for bituminous coal at the mine, as adjusted and modified, by order of the United States Fuel Administrator, to meet exceptional conditions in certain localities, is hereby amended by adding the sum of 45 cents to each of the prices so prescribed or so adjusted and modified, subject, however, to the following express exceptions:

"(1) This increase in prices shall not apply to any coal sold at the mine under an existing contract containing a provision for an increase in the price of coal thereunder in case of an increase in wages paid to miners.

"(2) This increase in prices shall not apply in any district in which the operators and miners fail to agree upon a penalty provision, satisfactory to the Fuel Administrator, for the automatic collection of fines in the spirit of the agreement entered into between the operators and miners at Washington, October 6, 1917.

"This order shall become effective at 7.00 a. m., on October 29, 1917."

### **ANTHRACITE ROADS HANDLE 17 PER CENT MORE TONNAGE**

Reports compiled for the Railroads' War Board indicate that unless something unforeseen occurs, the amount of anthracite coal transported by the railroads this year will exceed the tonnage of any previous year by a considerable amount.

According to the reports, which show the operation of the nine anthracite railroads, the aggregate anthracite tonnage transported by these roads during the eight-month period ending August 31, this year was 7,668,382 tons more than in the same period last year, an increase of 17.18 per cent.

To produce this increase, the anthracite roads carried a gross tonnage of 52,291,445 tons from the mine mouths as against 44,623,063 for the first eight months of 1916.

The increase for the month of August alone this year over August, 1916, was 1,583,609 tons, or 28.35 per cent. The July increase was 24.38 per cent and the June increase 25.24 per cent. These figures indicate that recent reports to the effect that there has been a severe curtailment in the production and distribution of anthracite coal are based upon rumor rather than facts.

The anthracite roads include the Philadelphia & Reading Railway; Lehigh Valley Railroad; Center Railroad of New Jersey; Delaware, Lackawanna & Western Railroad; Delaware & Hudson Company; Pennsylvania Railroad; Erie Railroad; New York, Ontario & Western Railway and Lehigh & New England Railroad.

### **USE OF OPEN-TOP CARS IS ORDERED RESTRICTED**

#### **Coal, Coke and Raw Materials Used in Metallurgical Industries to Have Exclusive Right to Use This Kind of Equipment**

Open-top cars have been restricted to use in the transportation of coal, coke, ore, and raw materials which are used in the metal, sugar, and fertilizer industries, by priority order No. 2. A portion of it reads as follows:

"Whereas it has been made to appear, and the President, through the undersigned, finds that open top cars (other than flat cars and cars assigned to work service), suitable for the transportation of coal, coke, ore, limestone, sugar beets, sugar cane, sorghum cane, and raw materials for use in the metal, sugar, and fertilizer industries, and other commodities necessary to the national defense and security are being utilized in the transportation of the less essential commodities and articles hereinafter specified to such an extent as materially to interfere with the transportation of the aforesaid commodities required in the conduct of industries necessary in the prosecution of the present war, and that it is necessary for the national defense and security that priority should be accorded coal, coke, ore, limestone, sugar beets, sugar cane, sorghum cane, and raw materials for use in the metal, sugar and fertilizer industries and other commodities required in the national defense and security in the use of such cars over the commodities and articles hereinafter mentioned;

"Now, therefore, by reason of the premises the undersigned, in the name of the President, orders and directs that, on and after the first day of November, 1917, and until further order of the undersigned, all common carriers by railroad in the United States in the distribution of open-top cars, other than flat cars, and in the transportation of freight in such cars shall deny the use of open-top freight cars other than flat cars to shipments of the following commodities and articles, except in shipments for the United States Government, viz:

"1. Materials and supplies, other than coal, for the construction, maintenance, or repair of public or private highways, roadways, streets or sidewalks.

"2. Materials and supplies, other than coal, for the construction, maintenance, or repair of theatres, or other buildings or structures, to be used for amusement purposes.

"3. Materials and supplies, other than coal, for the manufacture of pleasure vehicles, furniture or musical instruments.

"4. Passenger vehicles, furniture, and musical instruments, which articles the undersigned finds are not essential to the national defense and security."



## HUGE TONNAGE OF METAL LIES RUSTING ON FARMS

**George Otis Smith Points Out How Nation  
Will Be Benefited if Scrap Metals are  
Marketed**

The shortage in the supply of the iron and steel, which this country must have in increasing amounts if the war is to be won, has developed a new source of income for the farmer, and not merely a few farmers but most farmers.

Geo. Otis Smith, the director of United States Geological Survey, calls the attention of farmers to the fact that even at the recently fixed prices of iron and steel it should be possible for most farmers to reap an overlooked profit through the sale of the old iron and steel scattered about their premises; that the saving of such old scrap metal will help to meet the present serious deficiency in the supply of iron and steel; that the use of the old metal will accomplish savings in coke, which is now to be had only at unprecedented prices; that the delivery of the old iron and steel at foundries far from iron mines and big steel centers will correspondingly relieve the excessive strain on the mines, some of the furnaces, and the railway and boat traffic in the coke and iron producing districts. The farmer who turns in his junk while the present prices prevail is likely not only to make a clear profit over the cost of hauling and freight, but, through increasing the iron and steel supply, he is contributing to the successful prosecution of the war.

Iron and steel are needed and must be had for innumerable things—for guns, shells, ships, bridges, buildings, docks, automobiles, airplanes, rails, cars, engines, pipe, oil-well casings, etc., and for export to the Allies; Italy in particular being badly in need of steel for all purposes. This is the main fact.

In the Northeastern States scrap metals have long been more or less fully taken care of, mainly by the ubiquitous junk man, and along most railways and about most industrial plants they are now salvaged systematically. However, in the greater part of the United States little attention is given to saving the old metal scattered about the industrial plants of the farmers, where abandoned binders, plows, mowers, rakes, etc., occupy the fence corners and roadsides, and discarded stoves, pumps, pipe, and small utensils rust about the barns and sheds. A considerable part of this junk is already on wheels with tongue and whiffletree attached, ready in fact to be "walked on its own legs" to the freight station.

According to the census returns there were in 1910 about \$1,265,000,000 worth of agricultural machinery alone on the 6,361,502 American farms. Farm implements, not including stoves, chains, tools, etc., valued at about \$165,000,000, are sold

annually. A considerable part of the cost of manufacturing this farm machinery lies in the metals used, and the metals include not only iron and steel of various grades and values but occasional small parts of brass or copper. Most binders and mowers have one or more bearings lined with babbit metal containing tin now worth about 60 cents and lead worth 10 cents per pound. On the whole, excluding the metals used in railroad construction and transportation, or in city engineering and building, by far the greater part of all the iron and steel produced in this country in normal years is shipped out to the farm. It has been roughly estimated that three-fourths of this metal stays on the farm. As to this question, the farmer can judge for himself. How much of this is lying around on your premises? If there is any—and there is probably plenty—it is a good time to consider its disposal while the war lasts and the prices are high. Besides, the country needs the metal.

Many farmers will take advantage of the opportunity to recover a profitable revenue from this overlooked and waste product; others, according to distance from the markets, may sell at little or no profit, except the satisfying sense of patriotic duty performed. Still others remote from the consuming foundries and furnaces cannot afford a high cost of delivery which may far exceed the price received for the junk. Information should be secured in advance on this question. The Geological Survey suggests that farmers take up the question through the grange, the alliance, the farmers' unions, State experiment stations, the farmers' institutes, and other similar organizations, with a view to ascertaining the location of the best market, probably the nearest foundry or junk dealer; the cost of transportation; the best prices obtainable for the different classes of junk or implements, and the quantities of junk that can be used at the foundry or handled by the dealer. The same agencies might well arrange for cooperative local action on the part of the farmers in the different communities, fixing dates when cars would be in readiness for loading the old metals, informing the farmers as to possible grading of their junk and attending to railway transportation, delivery, and possible settlements at the points of consumption.

Cooperation should bring the best results. Care should be taken not to overwhelm the furnace or consumer by all shipping at once, so that too great quantities are delivered within a short period, for it is important to bear in mind that many foundries may not have the junk capacity or the extra labor needed to assort and break up great quantities of scrap when it is delivered. Somewhat definite arrangements should be made in advance of shipments, and these can best be accomplished by some such agencies as those suggested above.



The coming autumn, winter, and early spring should be the best time for gathering up the scrap metals, getting in touch with the markets, and arranging community shipments. The farmer should learn whether he is too far from markets and should ascertain the scope and extent of the market demands. There is plenty of time within which to gather and ship his scrap, but his cooperative information system should be organized now. The farmers have many hundreds of thousands of tons on hand; the prices are unprecedentedly high; the country needs the metals. From the economic standpoint, it is a question of profitable thrift, of relieving in part the shortage in the metals, of conserving the iron ore and coal in the ground, and of service to the country.

### **CYANIDE EXPERT CALLED TO HELP FOOD ADMINISTRATOR**

A mining man of national reputation has been called to Washington by Herbert Hoover, the Food Administrator, to take charge of the chemical division of his organization. Due to the importance of numerous chemical problems which confronted the Administration, Mr. Hoover summoned Charles W. Merrill, of San Francisco, to take charge of this work. Mr. Merrill has specialized largely in the chemical problems of mining. It was he who in 1894 erected one of the first cyanide plants in the country on the property of the Standard Mining Company at Bodie, California.

Mr. Merrill's first work will be to try to relieve the arsenic situation. Another of his immediate activities will be toward the elimination of waste in the refrigerating industry. He believes that this will have a material bearing on increasing supplies of ammonium sulphate.

### **Demand for Coal Unprecedented**

The demand for coal continues largely in excess of the supply even though the production this year has exceeded all previous records. The increase in the production of bituminous coal in 1916 was 13.5 per cent over 1915, in 1917 it is expected to reach 10 per cent over 1916, the banner year. It is obvious therefore that there is no shortage in coal output as such, but only in the sense that industrial demands are increasing at a more rapid rate than the 10 per cent increase in the coal mined.

F. G. Clapp, managing geologist of the Petroleum Division, is a corporal in the Veteran Corps of Artillery of the State of New York, and called into service from time to time in the vicinity of New York City.

### **GEOLOGICAL SURVEY TAKES CHARGE OF FUEL ADMINISTRATION STATISTICS**

To facilitate the work of the United States Fuel Administration, and in line with the policy of utilizing to the fullest extent, in this work, existing governmental agencies, it has been arranged for the United States Geological Survey to collect, assemble and record for the Fuel Administration all necessary statistics of production, distribution, and consumption of coal and coke, to keep the necessary records, by mines, of coal and coke under contract, under order, and free, and to advise the Fuel Administration where suitable coal or coke may be available to be applied on emergency needs, and to furnish other information.

Through this cooperation unnecessary duplication of requests on producers, distributors, and consumers, for data is expected to be eliminated and full advantage is had of the going organization in the Geological Survey under C. E. Lesher and his associates, and of the records and facilities for handling statistical investigations possessed by that Bureau as a result of years of experience in this special line.

The Fuel Administration assumed the additional expense necessary to enable the Geological Survey to meet the demands of the situation.

The Fuel Administration wants to ascertain as quickly as possible the quantity of free coal available by individual companies and to obtain information at once from a number of manufacturing plants as to quantity of coal on hand and the extent of their monthly requirements. A number of plants with sufficient coal to run them several months are continuing to add to their surplus, it has been learned. In one instance a plant had 205,000 tons on hand, sufficient for operation for twelve months, and continued to receive shipments. The Fuel Administration, of course, requested the shipper to suspend shipments to this plant. This action will be taken, in every instance where the supply is in excess of reasonable requirements. In this way it is expected to add considerably to the free coal available without interfering with other obligations. There are other details which enter into the situation but the need at the moment is recognized to be to ascertain the free coal available and to suspend shipments to plants stocking up unnecessarily.

### **Petroleum an Absolute Essential**

"From a war standpoint petroleum is an absolutely essential fuel. It is furnishing a large part of the power for the moving of fighting machines and supplies, whether transported by land, water or air."—Extract from the address of Van. H. Manning, before the Fuel Administrators.

## WEEKLY REPORTS ON METAL PRODUCTION BEING MADE

### Producers of Copper, Lead and Zinc Consent to Give Geological Survey Fine Informa- tion as to Output

Statistical information covering the production of copper, lead and zinc is being collected weekly by the United States Geological Survey through an arrangement recently effected with the producers. The information is gathered for the use of the War Industries Board. No portion of it is being made public. B. S. Butler, the Survey's copper specialist, is in charge of the compilation being made of information with regard to copper, and C. E. Seibenthal is in charge of the returns being made by the lead and spelter industries.

George Otis Smith, the director of the United States Geological Survey, sees in the consent of the producers to furnish weekly statements of their production and other information another expression of the desire of the metallurgical industries to cooperate most heartily and effectively with the Government at this time, when the nation's needs for these important war materials are so urgent.

The machinery of the Geological Survey and its extensive records covering long periods of years is proving to be of the greatest value to the War Industries Board, to the Council of National Defense, and to the Fuel Administration. The Fuel Administration began the building up of a statistical department of its own, entirely independent of that of the Geological Survey. Before it had progressed far, however, it became evident that much duplication would result and that the Geological Survey is in a much better position to handle this work. As a consequence, the statistical department of the Fuel Administration was merged with that of the Geological Survey and all placed under the direction of C. E. Leshner, the Survey's geologist in charge of coal statistics. Close cooperation also exists between the Survey and the War Industries Board.

### Governors Call on Garfield

Governors of five New England States called at the Fuel Administration October 26, and went over the New England coal situation with Dr. H. A. Garfield, the fuel administrator. Dr. Garfield outlined to them measures the Fuel Administration is taking to assure the New England States an adequate fuel supply for the winter.

The following governors were present: Samuel W. McCall, of Massachusetts; H. W. Keyes, of New Hampshire; Carl E. Milliken, of Maine; Marcus H. Holcomb, of Connecticut, and H. F. Graham, of Vermont.

## OPPOSES FIXATION OF PRICE ON CRUDE OIL AT WELLS

### Prominent Authority on Petroleum Industry Urges that Nothing Be Done to Discour- age Prospecting

With the Federal Trade Commission considering the advisability of governmental fixation of crude oil prices, the advisability of such procedure has been the subject of much discussion during the month in Washington. One of the best posted men in the oil industry expresses his opinion of such procedure as follows:

"Fixation of the price of crude oil at the wells, would, at this time of national peril, result only in dire calamity.

"Conditions in the petroleum industry of the United States are such that the producer of oil needs every possible incentive to develop the resources of known fields and to search aggressively for new pools. His burden is already great with increased taxes both State and Federal, with increased cost and acute scarcity of drilling requisites, with advanced cost and threatened shortage of labor, and with growing scarcity of new territory of promise, and it is believed that any attempt to deprive him of even a minor part of his share in the higher prices now prevailing for the fruits of his labor could have no other effect than to destroy his initiative, arouse his resentment and diminish or terminate his necessary activities.

"With but few exceptions, the result of fortuitous circumstances, the great fortunes that have been made in the petroleum industry have not been made by the actual producer of the oil. They have been made by the land owner, the refiner and the marketer who have undertaken no especial hazards and who have ever been assured a return on their investments.

"The failure in Russia of governmental fixation of crude oil prices to suspend in 1916 the operation of the world-old law of supply and demand, the train of reprehensible practices that resulted from evasions of the fixation decrees, and the abrupt decrease of drilling activity entailed by the well-meant efforts of the government to lower prices of fuel oil to consumers in the interior of Russia, provides a modern example of efforts to control the petroleum industry from the producing end, of which this country should not fail to take note.

"If federal regulation of petroleum production must come in order that the Government may be assured a supply of oil for its war-time needs, it is suggested that it takes the form of pro-rata requisitions of oil from the producers at specified prices, if necessary, but that it also permit the producer to sell his



surplus oil in an open market determined by the law of supply and demand.

"It is believed, however, that any action tending to diminish the returns of the oil producer from the sale of his production should await the results of stringent measures to reduce the unnecessary uses of gasoline and lubricating oils. The enforcement of regulations to prevent the operation of automobiles for pleasure purposes on Sundays, and on week days after 7 p. m., during the period of the war, would go a long way toward solving the motor-fuel problem both as to the quantity of gasoline available and as to its price to the public.

"The fact cannot be too strongly emphasized that as long as the war continues the producer of petroleum should be assured every possible encouragement to assume the increased costs of drilling in areas where even wells of small capacity are possible, and the extra costs and hazards of drilling in wild-cat territory. The vanishing margin between daily production and daily consumption of crude petroleum in this country offers abundant evidence to that effect."

#### State Fuel Administrators

The complete list of State fuel administrators, appointed to date, are as follows:

Alabama, S. P. Kennedy, Anniston; Arizona, Will L. Clark, Jerome; California, Albert E. Schwabacher, San Francisco; Colorado, Wm. J. Galligan, Denver; Connecticut, Thomas W. Russell, Hartford; Delaware, Charles H. Ten Weeges, Wilmington; District of Columbia, John L. Weaver, Washington, D. C.; Georgia, Dr. L. G. Hardman, Commerce; Idaho, Frank R. Gooding, Gooding; Illinois, John E. Williams, Streator; Indiana, Evans Woollen, Indianapolis; Iowa, Charles W. Webster, Waucoma; Kansas, Emerson Carey, Hutchinson; Louisiana, John G. O'Kelley, New Orleans; Maine, J. C. Hamlen, Portland; Massachusetts, J. J. Storrow, Boston; Michigan, William K. Prudden, Lansing; Minnesota, Judge John F. McGee, Minneapolis; Mississippi, C. L. Townes, Minter City; Montana, M. J. Swindlehurst, Helena; Nebraska, John L. Kennedy, Omaha; Nevada, E. H. Walker, Carson City; New England, J. J. Storrow, Boston; New Hampshire, Charles M. Floyd, Manchester; New Mexico, Wm. C. McDonald, Carrizozo; New York, Albert H. Wiggin, New York City; North Carolina, A. W. McAlister, Greensboro; North Dakota, I. P. Baker, Bismarck; Ohio, Homer H. Johnson, Cleveland; Oklahoma, P. A. Norris, Ada; Oregon, Fred J. Holmes, La Grand; Pennsylvania, William Potter, Philadelphia; Rhode Island, George H. Holmes, Providence; South Carolina, B. B. Gossett, Anderson; Utah, W. W. Armstrong, Salt Lake City; Vermont, H. J. M. Jones, Montpelier; Washington, David Whitcomb, Seattle; Wisconsin, W. N. Fitzgerald, Madison.

## GLOBE-MIAMI STRIKE SETTLEMENT EFFECTED

**Workers Committee to be Established at Each Mine—United States Arbitrator to Determine all Disputed Questions of Fact.**

Reporting by telegraph on the settlement of the Globe-Miami strike the President's Labor Commission said:

"The strike in the Globe-Miami copper district of Arizona is settled. The President's Mediation Commission has succeeded in working out a plan of adjustment which has been accepted by the managers of the Old Dominion, Miami, Inspiration, and the International Smelter, the controlling mines; President Moyer, of the International Union of Mine, Mill and Smelter Workers, and the local unions which are out on strike. This means the early resumption of copper production at its full capacity by the single most important copper center in Arizona, if not in the United States.

"The normal monthly output of the Globe-Miami district is about 21,000,000 pounds of copper, requiring a working force of over 5,000 men. The strike has affected this district since July 2 with an interruption in the production of copper amounting, to date, to a loss of over 60,000,000 pounds. While there has been a very gradual resumption of work, it is far below the normal, and there was no promise of a settlement which would have assured the Government's need for copper for the prosecution of the war in the absence of intervention by the Government.

"The President's Mediation Commission proceeded in its labors upon the following principles:

"The country must have the maximum uninterrupted output of copper during the period of the war. No grievances on the part of the workers, whether well founded or imaginary, must be allowed to result in stoppage of production. Practicable machinery must be devised for the adjustment of grievances, whether real or imaginary, to prevent stoppage of production. To carry these principles into execution, the plan of settlement reached by the President's Commission embodies the following chief features:

"First, the establishment of a workers committee for each mine, wholly independent of any influence, direct or indirect, to be exercised by the company. This committee is to be composed exclusively of men working at each mine with the right, however, of union members to have a union representative in the presentation of grievances.

"Second, the employment of those now on strike, except those guilty of seditious utterances against the United States or those who have membership in an organization that does not recognize the obligation of contract. In providing for the reemployment, an important principle is introduced in that the district is



treated as an industrial unit, instead of the individual mine. Reemployment is to be secured through a central employment committee for the district. The provision is made because the labor shortage of the district, as well as the growing labor shortage throughout the country, requires the full utilization of all available man power and the regulated employment of the men on strike.

"Third, the impartial and effective working of the scheme is assured through the appointment of a United States arbitrator, acceptable to both sides, who is to determine all disputed questions of fact as to which the management and the men cannot in the first instance agree. The success of the settlement rests on the loyal spirit of all parties in carrying out the agreement. But the arbitrator is necessary to secure the settlement of any difficulties as to which in perfect good faith the two sides may not agree.

"The machinery thus provided is in substitution of strikes and lockouts during the period of the war. With the reestablishment of good relations between the mines and the men which is confidently hoped for, there is every prospect of a steady increase in the production of copper in the Globe-Miami district, and the resumption, before long, of its maximum output. The President's Mediation Commission is proceeding to Clifton with a view to securing a prompt settlement of the difficulties in the Clifton-Morenci-Metcalf district, and the resumption of copper production in that district."

The Commission consists of William B. Wilson, Secretary of Labor; Col. J. L. Spangler, of Pennsylvania; Verner Z. Reed, of Colorado; John H. Walker, of Illinois; and E. P. Marsh, of Washington. Felix Frankfurter, of New York, is acting as Secretary of the Commission.

Earlier in the month the labor commission investigating the trouble in the Globe-Miami district telegraphed the following report to the President:

"The President's labor commission, sent to the Southwest and the mountain region, has concluded the hearing of the side of the striking miners in the Globe-Miami copper district of Arizona. The commission was gratified to hear that the State leader of the strikers and President Moyer of the International Union of Mine, Mill and Smelter Workers have unreservedly placed the adjustment of the Arizona labor difficulties into the hands of the commission with an unconditional agreement to abide by any decision the commission may make for the maintenance of peaceful labor relations in Arizona at least during the period of the war.

"The commission is now hearing the side of the operators and when that side is concluded and the views of other parties interested in the commission's inquiry are submitted the commission will begin the task of formulating a plan of settlement through the cooperation of all interested parties, which it is hoped

will satisfy all sides and thus give the nation the copper it needs under just conditions of employment.

"The striking unions concluded the presentation of their case to the commission by making an unqualified offer to go back to work immediately upon the agreement of the operators to submit the dispute to arbitration by the commission, and to continue at work pending the arbitration. The strikers expressly stated that they were eager to do away with any delay which would in the least hold up the normal production of copper for the use of the nation."

#### **PIER EQUIPMENT AT NORFOLK TO BE EXTENDED AT ONCE**

Representatives of the Norfolk & Western, Chesapeake & Ohio, and Virginia Railways recently met L. A. Sneed, of the United States Fuel Administration, in conference with regard to the handling of coal at Hampton Roads.

While there are ample pier facilities to take care of normal requirements, the large demand for coal at this port on account of increased requirements of the Government and the New England delivery, has created a shortage of pier facilities, the result being that there is not sufficient pier space to accommodate all vessels on arrival, and the meeting was called by the Fuel Administrator for the purpose of arranging to facilitate the loading of vessels by supplying bunker coal in the stream.

Under this plan the cargo vessels would be loaded at the piers and bunkers supplied as stated in the stream. The pier facilities are sufficient for greatly increased tonnage for cargo vessels, and it would not be necessary to delay these vessels while loading bunkers. On account of the increased demand of the Government covering Army and Navy requirements, together with increased commercial demand for New England and other points, improved facilities for handling the coal requirements at Hampton Roads are necessary and will be provided as the result of this conference.

The Emergency Fleet Corporation was represented by Mr. Kent, and the New England interests were also represented. The following interests were also represented:

Chesapeake & Ohio Railway by P. I. Ford, superintendent; Virginia Railroad by E. E. Kerwin, vice-president, and S. M. Adsit, general freight agent; Norfolk & Western Railroad by A. C. Needles, general manager, and the Tidewater Coal Exchange by J. W. Howe, assistant commissioner.

#### **Settle Wage Dispute**

The joint conference of operators and miners of the coalfield of southeastern Kentucky and eastern Tennessee, called in Washington by the Fuel Administrator, reached an agreement which brought about an immediate resumption of mining in that field.



## NITRATE PLANT IS TO BE BUILT ON MUSCLE SHOALS

**Selection of Site Comes as Surprise to Official Circles—Some Believe Board Was Overruled**

Selection of Muscle Shoals for the Government's nitrate plant caused great surprise even to those who had been following the matter most closely. There is a difference of opinion as to whether the nitrate board was overruled in the selection of the site. The recommendation of the board was that the plant be located in southwestern Virginia, or in the contiguous region. While "contiguous region" is a rather elastic specification, it is regarded as probable that the board expressly intended to eliminate Muscle Shoals as the location of the plant. Some are of the opinion that the President personally is responsible for the selection of Muscle Shoals, while Senator Underwood, of Alabama, is credited with having been an important factor in bringing about that decision.

The official announcement of the plant's location follows in full:

"The Secretary of War announces that the President has approved the location at Sheffield, Ala., of the initial ammonia and nitric acid plants to be constructed with a portion of the \$20,000,000 appropriated for nitrate supply by the national defense act, providing a suitable site be there obtainable at a reasonable price. As satisfactory prices have now been agreed upon for the transfer of the several parcels of land involved, the location of these initial plants at Sheffield may now be regarded as assured.

"Sheffield, Ala., is located on the Tennessee River just below the Muscle Shoals, and is near to the phosphate beds of central Tennessee. On the site selected there are several substantial steel buildings which can be utilized with a saving of expense and of time.

"These initial plants were planned with a view to determining the best and most economical process of nitrogen fixation. Enough land is being acquired to permit of large expansion—by the same or by other processes—in case such expansion at the same place shall be decided upon.

"These plants will produce material of much value in the manufacture of munitions for the war. After the war any excess of their product over the munitions requirements may be sold for use in fertilizer."

### Coke Production Decreases

The output of beehive coke in 1917 has fallen short of the record set last year; the production from January 1, 1917, to the end of August is estimated to have been 23,213,747 net tons or 413,730 tons less than the output in the corresponding periods of 1916.

## COAL PRODUCTION THIS YEAR TO EXCEED 1916 BY 10 PER CENT

So much is being said about the shortage of bituminous coal, and the general public realizes so little the important gains in output made by the operators under trying conditions, last summer, over all previous records, that the statement just issued by the United States Geological Survey, on production in 1917 compared with 1916 is particularly timely. In commenting on this report, prepared by the statisticians of the Geological Survey, Director Geo. Otis Smith points out that the shortage is not due to the failure of the soft-coal mines to produce more coal than in the past, for the country on September 1, was about a month ahead of last year in output and is expected to finish the year with an increase of 10 per cent over 1916, the banner year, and of 25 per cent over 1915.

The tremendous increase in manufacturing and transportation activity this year has created a demand for soft coal in excess of any in the past, an increase in demand that is difficult to measure in terms of tons but that is certainly more than the 10 per cent by which production has increased. To meet this demand the mines have been producing soft coal at a rate never before equaled. In the second week of July, 1917, the average daily production was more than 1,900,000 tons, the highest point yet attained; in the middle of August the lowest rate for the summer, 1,638,000 tons, was recorded; and in the last week of September the daily rate was 1,823,000 tons. In the first eight months of 1917, the output of soft coal was 363,500,000 tons, or 37,000,000 tons more than in the first eight months of 1916. In the same period shipments of anthracite increased 16 per cent over those of 1916.

## WESTERN KENTUCKY ACCEPTS WAGE CONFERENCE SCHEDULE

A delegation of western Kentucky coal operators and miners called at the offices of the United States Fuel Administration October 24 and announced that they had agreed on the application in District 23, of Kentucky, of the new scale of miners' wages announced recently for the Central Competitive Field contingent on coal price increases. They asked that the price of coal be increased to absorb the proposed wage raises in their district.

## SNIDER HEADS TRANSPORTATION END OF FUEL ADMINISTRATION

The Fuel Administration has announced the appointment of G. N. Snider, of New York City, as head of its transportation department. Mr. Snider comes from the New York Central Railroad where he has been coal traffic managers.



## PRIORITY ORDER INSURES COAL FOR P. R. R. SYSTEM

### Railroads to be Allowed Percentage of Output of all Mines on Its Lines—Other Orders to Follow

The first of a series of orders to distribute coal on a priority basis and regulate the movement of coal cars, issued recently by Fuel Administrator Garfield, provides that the Pennsylvania Railroad, which serves about 700 mines, shall have its needs properly taken care of.

Commercial coal will be distributed by giving preference in order to the Government, domestic users, public utilities and all commercial organizations using coal. The Pennsylvania order was adopted after conferences extending over the past two weeks with a committee composed of the following:

C. M. Shaeffer, chairman, Commission on Car Service; D. E. Spangler, Commission on Car Service; G. W. Kirtley, assistant to Judge R. S. Lovett, director, Priority in Transportation; E. H. DeGroot, Jr., chief, Division of Car Service, Interstate Commerce Commission; A. G. Gutheim, attorney examiner, Interstate Commerce Commission; L. A. Snead, representing the Fuel Administration; T. H. Watkins, president, Pennsylvania Coal & Coke Corporation; J. Lloyd, Jr., of the Altoona Coal & Coke Co., Altoona, Pa.; W. K. Field, president, Pittsburgh Coal Company, and president, National Coal Association; and B. W. Warren, attorney for the Fuel Administrator.

Representations were made some time ago by mine operators on the Pennsylvania system that their coal was being confiscated by the railroad, whose right to do this is unquestioned. This diverted a good deal of commercial coal already contracted for, which displeased dealers to whom it had been consigned. It resulted also in confiscation of cars that would otherwise have been available for commercial loading. Often the railroad was obliged to keep coal on the cars longer than is necessary in the regular course of business.

All producers of bituminous along the Pennsylvania lines will contribute pro rata to the fuel needed for its operation. Operators who have already agreed to supply the road with the amount that would be deemed their correct percentage will continue their contracts and remain unaffected by the new order.

Other mines must contribute the amount declared to be equitable by the Fuel Administration, at the government price. The amounts required will, in some instances, interfere with delivery of full consignments called for by their contracts with customers. But the railroads must be kept running. The

Fuel Administration suggests that operators withhold coal from persons or corporations needing it least, and that they attend particularly to the supply of other railroads than the Pennsylvania.

It is deemed particularly essential that coal needed by the United States Government be not interfered with. The Fuel Administration may make a special priority order in special cases and intends to care fully for domestic users. Munitions plants and firms manufacturing necessities of life would come into the priority order class. The plan is expected to show immediate results in an increased supply of coal cars and a steady, equitable flow of fuel to the railroads.

## OPERATORS AND MINERS AGREE ON WAGE SCALE

### Advance is Conditioned on Increase of Schedule of Prices Sufficient to Cover the Material Advances Specified

Coal miners and operators of western Pennsylvania, Ohio, Indiana, and Illinois, following the wage conference, asked Dr. Harry A. Garfield, Federal Fuel Administrator, to increase coal prices at the mine, fixed in President Wilson's orders of August 21 and 23, to permit wage advances agreed upon.

Dr. Garfield took the matter under advisement, but at this writing has not announced the decision of the Fuel Administration. The agreement drawn up between operators and representatives of the United Mine Workers is conditional upon the proposed price increase.

It is stipulated that the mining prices for mine-run coal, pick and machine, in the present contract be advanced 10 cents per ton; that in the block coal field of Indiana the screen-coal price be advanced 12½ cents per ton; that all day labor and monthly men, except trappers and other boys, be advanced \$1.40 per day and trappers 75 cents per day, while boys now being paid more than \$1.90 per day, but less than men's wages, shall be advanced \$1 per day; and that all yardage, dead work and room turning be advanced 15 per cent.

Subject to approval at the next biennial convention of the United Mine Workers, representatives of that organization agree that the present contract be extended for the duration of the war, but not beyond April 1, 1920.

Both miners and operators agreed to adhere patriotically to the present scale, as set forth in a contract running to March 31, 1918, if the Fuel Administration refuses to take action. A memorandum to Dr. Garfield states that there is difficulty in keeping the men from emigrating to other fields, where the wage scale is higher, and that there is much unrest because of the high cost of living.

The agreement provides for more faithful



observance of penalty clauses in contracts, by which stoppage of work will mean collection of fines, and for introduction of penalty clauses where none exist.

Delegates present for the United Mine Workers were: J. P. White, national president; William Green, national secretary; F. Farrington, Illinois president; Edward Sewart, Indiana president; William Mitch, Indiana secretary; John Moore, Ohio president; G. W. Savage, Ohio secretary; P. Murray, Pittsburgh president, and Robert Gibbons, Pittsburgh vice-president.

Representing the operators were: T. T. Brewster, St. Louis; E. T. Brent, Chicago; Phil Penna and M. Freeman, Terre Haute, Ind.; Mike Gallagher and S. H. Robbins, Cleveland; John H. Donaldson and Tracey Guthrie, Pittsburgh.

#### **F. C. BAIRD PLACED IN CHARGE OF COAL SHIPPED FROM LAKE PORTS**

In consequence of arrangements satisfactory to Judge McGee, State fuel administrator for Minnesota, Mr. Groverman, representing the dock interests on Lake Michigan and Lake Superior, F. C. Baird, commissioner of the Lake Erie Coal Exchange, and Mr. McCue, assistant fuel controller of Canada, the fuel administrator, ordered on October 9, that until further notice the raising of the embargo recently placed against the shipment of coal to Canada by Lake Erie ports.

F. C. Baird, of Cleveland, Ohio, was appointed a representative of the United States Fuel Administration, to take charge of the apportionment of all the coal shipped from Lake Erie points to the Northwest and to Canada.

#### **IMPORTS OF RAW MATERIALS PASS THE BILLION-DOLLAR MARK**

For the first time in the history of American trade the imports of raw materials passed the billion-dollar mark during the fiscal year 1917. According to statistics published by the Bureau of Foreign and Domestic Commerce of the Department of Commerce, the exact total was \$1,109,655,040, a noteworthy increase over the \$948,825,500 in 1916 and the \$632,865,860 in 1914, the last normal year before the war.

The raw materials now imported in the greatest quantities are hides, india rubber, raw silk, wool, raw cotton, copper ore, and flax-seed, and important increases are recorded for fur skins, gums, mineral oils; uncut diamonds, manganese ore, nickel ore, zinc ore and dyewoods.

#### **Coke Production**

The week's production of beehive coke is estimated at 689,918 net tons, an average per working day of 114,986 tons.—Weekly Report of the United States Geological Survey.

#### **BURTON PROCESS MAY BE TURNED OVER TO ALL PRODUCERS**

While no official announcement has been made of the release of the Burton process for cracking petroleum, some credence is given the following statement published by the Oil, Paint and Drug Reporter:

"Government officials expect to be able to make an announcement within a few days, concurred in by Standard Oil Company officials that the Standard Oil Company has turned over to the free use of independents and all producing companies the Burton process for refining gasoline.

"It was learned through officials of the Federal Trade Commission that the Government has asked the Standard Oil Company to make this sacrifice of an important trade secret and process so as to increase the amount and quality of gasoline for quick service.

"A. C. Bedford, president of the Standard Oil Company of New Jersey and chairman of the petroleum committee under the Council of National Defense and the Advisory Commission, was in conference for several days on this subject with government officials. At the office of Joseph F. Guffey, the newly appointed oil purchasing agent for the Government, it was stated that any announcement that may be coming on this subject would probably be given out by the Standard Oil Company.

"The Government officials in the Bureau of Mines, the Federal Trade Commission, the Navy Department and the Council of National Defense organization intimate that they confidently expect the Standard will accede to the Government's wishes.

"In this connection it has been brought to the attention of Mr. Guffey, who is now considered the government's official representative on all questions of petroleum and fuel oil supply, that the Burton process is the exclusive property of the Standard Oil Company of Indiana, and that some time since when the question of unfair competition was raised, the Standard Oil Company of Indiana voluntarily offered to allow the use of this process to any other producing concern which was not a rival in the same field.

"It is claimed that through the use of the Burton process, 40 per cent gasoline can be refined from the crude oil as against 20 per cent by other methods."

#### **Tells of Worthington Pumps**

A new catalogue has been issued by the Worthington Pump & Machinery Corporation covering its Pot Valve Pressure Pumps. The catalogue is unusual in the fact that it is an elaborate production of the printer's art and contains cuts and sections of its products so arranged as to give an exceptionally clear idea of their value.



## MORE ACCOMPLISHED AS MACHINERY LIMBERS UP

### Fuel Administration Called Upon to Face Difficult Problems During Month Just Passed

Events in Washington affecting the coal industry continue to move with great rapidity. The Fuel Administration's machinery shows decided evidence of passing out of the raw state that characterizes new organizations, and matters are being handled in a more systematic manner. The force, however, is entirely inadequate to the volume of work occasioned by the extended activities of the administration. An enormous volume of telegrams and letters reaches its offices each day.

By far the most important problem which has confronted the Fuel Administration during the past month was that growing out of the labor controversies. The operators and employes in the central competitive coal mining district reached an agreement whereby material advances were made in the wage scale. The details of this conference appear in another column of this issue.

The increase in wages was made contingent upon a corresponding advance in the price schedule. Other than to announce that he would not be forced into hurrying a decision in regard to the matter of price, Dr. Garfield gave no intimation of the trend of his thought on the matter until he announced the increase of 45 cents. While there have been claims in some circles that the operators are not doing their best to obtain maximum output, in the hope that it might have an influence in securing a higher schedule of prices, it can be stated on the best authority that no evidence to substantiate such a claim has been received at the Fuel Administration and it can be stated with equal positiveness that Dr. Garfield does not share this view.

Although the disappointment of the employes at not receiving the wage increase almost immediately was reflected in rather extended labor disturbances, the strikes were not general, and the tendency in the entire Central Competitive District was to live up to the promise made on the occasion of the wage conference when the representatives of the miners declared their willingness to continue on the present schedule if the Fuel Administration did not see fit to advance the price fixed for coal at the mines.

Space will not permit of the chronicling in detail of the activities of the Fuel Administration during the month, but the more important events of the month are treated under separate headlines and will be found on various pages of this issue. Particular attention is called to the arrangement which has been made by the Fuel Administration with the Pennsylvania and Baltimore & Ohio Railroads. This plan is to be extended to

other railroads of the country and will do away with the practice of commandeering coal in transit. It is regarded as one of the most effective steps that could be taken to better the distribution of coal, which promises to become an increasingly difficult matter to handle as winter settles down over the country.

Hardly of less importance than the steps that have been taken to improve distribution are the very active efforts which are being made to prevent the hoarding of fuel. Since fuel supplies are being checked from several angles and agents are being put in the field to make personal investigations, it is believed that consumers will be prevented from overstocking.

Another drastic measure is that looking to the commandeering of a certain percentage of all coal mined. It is recognized that where the entire output of a mine is under contract the coal may be quite as badly needed by the holder of the contract. It is believed, however, that arrangements can be made to handle such cases and that the general effect of the regulation will be beneficial.

## REMBRANDT PEALE ENTERED

### COAL TRADE IN 1887

Rembrandt Peale, who represents the bituminous coal industry on the staff of the Fuel Administration, was born in Lockhaven, Pa. His education was obtained in the public schools at Lockhaven, and at Lehigh University at South Bethlehem. He was graduated from the latter institution in 1883 with a B.S. degree. Afterwards he attended the law school of the University of Pennsylvania for one year. After finishing his schooling he spent two or three years in general business prior to embarking in the wholesale coal business in Philadelphia, in 1887. He was associated with the Bloomington Mining Company and the properties operated at that time are still included in the present holdings of Mr. Peale's company.

### Itineraries of Rescue Cars

Car No. 7, J. M. Webb in charge. Williamson, W. Va., November 1 to November 3; White House, Ky., November 5, to November 12; Offut, Ky., November 13 to November 18; Paintsville, Ky., November 19 to November 24; Beaver Creek, Ky., November 25 to November 30; Pikeville, Ky., December 1 to December 22.

Car No. 8, G. W. Grove in charge. Dunloop, W. Va., October 28 to November 3; Mt. Hope, W. Va., November 4 to November 17; Oswald, W. Va., November 18 to December 1.

Car No. 5, Carl A. Allen in charge. Mace, Idaho, October 28 to November 3; Success, Idaho, November 4 to November 10; Kellog, Idaho, November 11 to November 17; Moscow, Idaho, November 18 to November 24.



CERTAIN COAL DISTRICTS  
ALLOWED HIGHER PRICES

Western and Southern Mines Principal Beneficiaries of Change in President's Schedule

Further classifications of bituminous coal were made last month by the Fuel Administration. The conditions in the fields named below were held to be exceptional, and do not affect the prices heretofore fixed by the President in the principal bituminous fields. Dr. Garfield stated that if upon completion of the investigations now being made of operators' costs in the fields affected, it is found that these changes are not justified, further modifications will be made at once.

|                                                                                                                                                                                                     | Run of mine. | Prepared sizes. | Slack or screenings. |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|----------------------|
| Pierce and King counties, in the State of Washington .....                                                                                                                                          | 3.25         | 4.50            | 3.00                 |
| LaFayette, Ray, Clay, Platte and Linn counties, in the State of Missouri .....                                                                                                                      | 3.15         | 3.40            | 2.90                 |
| Appanoose, Wayne, Boone and Webster counties, in the State of Iowa.....                                                                                                                             | 3.15         | 3.40            | 2.90                 |
| Thin vein seams at Hartford, Midland, Hackett, Greenwood and Demming, in the State of Arkansas .....                                                                                                | 3.05         | 3.40            | 2.40                 |
| Lefflore and Haskell counties, in the State of Oklahoma .....                                                                                                                                       | 3.50         | 4.30            | 2.25                 |
| Okmulgee and Tulsa counties, in the State of Oklahoma .....                                                                                                                                         | 3.10         | 3.90            | 2.00                 |
| Coal county, in the State of Oklahoma .....                                                                                                                                                         | 3.30         | 4.10            | 2.00                 |
| Pittsburgh and Latimer counties, in the State of Oklahoma .....                                                                                                                                     | 3.50         | 4.30            | 2.25                 |
| Bituminous domestic coal mined in the Walsenberg, Cannon City, Rout, Garfield, Gunnison, Durango, Mesa, Pitkin, Montezuma, Delta, Montrose and Rio Blanca Districts, in the State of Colorado ..... | 3.00         | 4.00            | 1.50                 |
| Bituminous steam coal mined in the Trinidad District, in the State of Colorado .....                                                                                                                | 2.75         | 3.25            | 2.00                 |
| Lignite coal mined in the Northern Field and El Paso Districts, in the State of Colorado ....                                                                                                       | 2.45         | 3.50            | 1.00                 |
| Osage county, in the State of Kansas .....                                                                                                                                                          | 2.55         | 4.00            | 2.30                 |
| Big Seam District, in the State of Alabama.....                                                                                                                                                     | 2.15         | 2.45            | 1.85                 |

|                                                                                              |               |                      |      |
|----------------------------------------------------------------------------------------------|---------------|----------------------|------|
| Pratt, Jaeger, Jefferson, Nickle Plate and Coal City Districts, in the State of Alabama..... | 2.35          | 2.65                 | 2.05 |
| Cahaba, Black Creek, Brookwood and Blue Creek Districts, in the State of Alabama.....        | 2.85          | 3.10                 | 2.45 |
| Coronoa District, in the State of Alabama.....                                               | 2.40          | 2.75                 | 2.05 |
| Montevallo District, in the State of Alabama.....                                            | 2.40          | 4.00                 | 2.15 |
| State of Wyoming.....                                                                        | 2.50          | 3.50                 | 1.25 |
|                                                                                              | Brazil block. | Slack or screenings. |      |
| Brazil block field, in the State of Indiana.....                                             | 2.95          | 1.70                 |      |

The Fuel Administrator also announces the following: Smithing coal may be sold, until further order, at the prevailing market price. Cannel coal may be sold, until further order, at the prevailing market price.

LEAROYD WILL REPRESENT  
ANTHRACITE INDUSTRY ON  
FUEL ADMINISTRATION STAFF

The Fuel Administration has announced the appointment of A. S. Learoyd, of New York City, to the staff of the Administration. Mr Learoyd's name was suggested by the anthracite coal industry. He is serving under L. A. Snead, head of the Division of Fuel Supplies, and is in charge of the distribution of anthracite. Mr. Learoyd is general freight agent of the Lackawanna Railroad system.

Changes in Assignments Made

Owing to the material increase in his administrative duties caused by the increasing importance of the war minerals, H. D. McCaskey, chief of the division of mineral resources of the Geological Survey, has been compelled to give up his work on quicksilver. For many years Mr. McCaskey has handled this work in person. Quicksilver now has been assigned to F. L. Ransome, who is in the West making a study of the situation. Several other rearrangements have been made in order to permit of more effective work on war minerals. F. L. Hess has been relieved of the work in connection with antimony, which has been added to the minerals being handled by E. S. Bastin. Adolph Knopf will be in charge of the work on tin, while arsenic and bismuth have been assigned to J. B. Umpleby.

Anthracite Shipments Show Increase

Anthracite shipments increased from 42,362 cars to 42,824 cars during the week of October 13.—Weekly Report of the United States Geological Survey.

# THE MINING CONGRESS JOURNAL

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NOVEMBER, 1917

## HERBERT E. GOODMAN

Herbert E. Goodman, vice-president and general manager of the Goodman Manufacturing Company, died in Chicago, October 3, at the age of 55 years.

Mr. Goodman founded and built up a large manufacturing business, and was closely identified with the development of the use of electricity in coal cutting and mine haulage from its earliest experimental days.

He was born in Chicago on the site now occupied by the main postoffice building in the heart of the city.

His connection with the mining industry began in the year 1888, when he entered the position of secretary in the newly incorporated Sperry Electric Mining Machine Co., formed to manufacture the electric pick machine designed by Elmer A. Sperry.

Early in 1893 Mr. Goodman, with his other associates, organized the Independent Electric Co., and purchased the patents and equipment of the Lechner Mining Machine Co., of Columbus, Ohio.

From this period dates the history of real efficiency in machine mining practice, the traveling chain with inserted bits quickly demonstrating its superiority to any type of pick machine, which, at best, was only an attempt to make a mechanical pick miner, rather than a real mining machine.



HERBERT E. GOODMAN

The "Independent" chain machine won its way slowly, until in the fall of 1894 there were a dozen or so in operation, together with several locomotives, dynamos, and switchboards, all built by this company. In January, of 1895, an order was secured for a complete mining plant, including boilers, engines, three generators, sixteen chain machines, and two locomotives, amounting to \$54,000, and constituting, at that time, the largest contract ever placed for electric coal mining machinery.

The business was rapidly developed and became firmly established under the aggressive management of Mr. Goodman, with the substantial support of the Link-Belt Company, and the able assistance of old and new associates in the work.

In April, of 1900, The Goodman Manufacturing Co. was organized, for which Mr. Goodman had enlisted Mr. F. S. Washburn, of Nashville, Tenn., as president, and to which he took with him many of his long-time associates.

In the fall of 1900 the new Goodman plant



—the beginning of the present large factory—was ready for occupancy, and the previous quarters in the Link-Belt plant were vacated.

The new company prospered continuously, forcing increases of capitalization and manufacturing facilities from time to time until today the industry is one of the most important in connection with the mining field. From the original chain mining machine and primitive locomotive have been developed improved and varied types of both machines and locomotives, building up the very extensive and varied Goodman line of equipment with which today all mining men are familiar.

In every important detail of the advancement in the industry, and of the growth of his company, Mr. Goodman has had an interested and personal part. His personality has always been an inspiration in every project, both within and without his own company.

Mr. Goodman has for many years been a warm supporter of the work of the American Mining Congress, both financially and through his personal advice and cooperation. All who knew him will bear tribute to his keen sense of public duty, his sympathy for every altruistic effort, and his practical help which was always cheerfully and freely given.

### **STRANGE FREAK OF DYNAMITE OCCURS IN A JOPLIN MINE**

Recently, while sinking a new shaft on the property of the Land Lead Mining Company at Joplin, Mo., a peculiar incident occurred which illustrates the enormous power of dynamite, the peculiarities of rock cleavage and breakage lines, and the effect of air resistance on a rapidly whirling body.

A 5½-inch well drill prospect hole had been sunk previously to locate the ore bodies, and a shaft 5 feet by 7 feet begun, using the well drill hole as a center line. When the bottom of the shaft was 75 feet below ground surface in solid hard limestone, the incident mentioned occurred. The cut holes, sometimes called "sump" holes, eight in number and 5 feet deep, were arranged to blast out the center cut to relieve the burden on the rib or "squaring up" holes to be drilled later. These eight cut holes were each loaded with four cartridges of 1¼-inch by 8-inch Red Cross Gelatin of 40 per cent strength and a No. 6 electric blasting cap, making a total of thirty-two cartridges.

The eight holes were fired simultaneously with an electric blasting machine, and the force of the blast threw a large boulder from the bottom to a height 100 feet above the top of the shaft. The boulder fell 50 feet away from the center of the shaft on top of the mine car track leading to the dump, breaking and bending it out of shape. This boulder, when measured, was 1½ feet thick, 3 feet wide, and 4 feet 6 inches long, but was somewhat irregular in shape, and was estimated to contain about 16 cubic feet. A conservative estimate for the weight of this class of stone is 165 pounds per cubic foot, which would make

the total weight of the boulder approximately 2,600 pounds. As the total height of the lift was 175 feet, the work done represents the expenditure of 455,000 foot-pounds of energy, or 17,344 foot-pounds per cartridge of dynamite, for such important items as the energy required to disrupt the cohesion of the rock particles, the enormous wind resistance against the hurling of this immense boulder through the air, and that represented in the shaft are entirely unknown values and are not computable, but they all go to show the vast amount of energy contained in dynamite for the performance of useful work.

Ordinarily, when subjected to a violent rending and disruptive force, a rock will break at the weakest point, and often in some classes of work, holes are drilled along the line where it is desired for the rock to break so as to weaken it along the projected line. A peculiar feature of this blast is that although there was a large hole, 5½ inches in diameter in the center, the rock did not disrupt or break along the imaginary line drawn through this center hole, which might be theoretically taken as the weakest part. This boulder came out and landed with the well drill hole intact through the 18 inches of thickness, and not even a crack was found radiating outward from the center.

Another peculiar feature of this boulder's freak performance was that it rose to the top of the flight without any twisting or whirling, but at the start of its descent it began whirling rapidly, and this whirling action caused it to curve outward and land 50 feet away from the shaft.

Since the boulder did not strike the sides of the shaft in the upward course, as evidenced by its not whirling, the line was practically perpendicular, or, at the maximum, a very slight angle from the vertical. Taking the maximum angle which would allow the boulder to clear the collar of the shaft without touching, the point at which it would have struck the ground should be 20 feet from the shaft. The influence of the air on a rapidly-whirling body is here strikingly shown, for the difference between 20 and 50 feet gives 30 feet as the horizontal effect of the curvature in the descending flight.

Many strange features, of which this incident is an example, occur when enormous forces are loosed, and when they work opposed to natural forces and subject to the laws of physics.

### **Increase in Bituminous**

A slight increase in bituminous production occurred during the week ended October 13. The total output including lignite and coal is estimated at 10,702,701 net tons, a gain of 0.7 per cent over the week of October 6. The average production per working day was 1,783,783 net tons, an amount but little in excess of the daily production at this season last year. —Weekly Report of the United States Geological Survey.



## REDUCTIONS IN ANTHRACITE PEA COAL ARE ORDERED

Reductions have been ordered in the price at which Pennsylvania anthracite pea coal may be sold f. o. b., the mines. Hereafter the maximum f. o. b. mine prices in the several fields will be as follows:

|                    |        |
|--------------------|--------|
| White ash.....     | \$3.40 |
| Red ash .....      | 3.50   |
| Lykens Valley..... | 3.75   |

Producers to whom a differential of not to exceed 75 cents was permitted in the President's order of August 23 may continue to add the same differential to the above prices, a Fuel Administration order states.

The following is the official order, in full:

To all persons, firms and corporations engaged in the mining and production of coal in the State of Pennsylvania:

The President of the United States having heretofore, on or about the 23d day of August, 1917, by virtue of the provisions of an act of Congress approved August 10, 1917, entitled, "An Act to provide further for the national security and defense by encouraging the production, conserving the supply, and controlling the distribution of food products and fuel," ordered and directed that the maximum prices which should not be exceeded in the sale of Pennsylvania anthracite pea coal should be as follows, to wit: White ash pea coal, \$4.00 per ton, red ash pea coal, \$4.10 per ton, and Lykens Valley, \$4.35 per ton, when sold by certain producers specified in paragraph 4 of the President's proclamation of August 23, 1917, and that when sold by any other producers the maximum price should not exceed by more than 75 cents the prices mentioned above.

Now, by direction of the President of the United States, the Fuel Administrator hereby orders and directs that, until further order in the premises, the above mentioned maximum prices for Pennsylvania anthracite pea coal be and the same hereby are modified and reduced, pending further investigation, to the following maximum prices: White ash pea coal, \$3.40 per ton; red ash pea coal, \$3.50 per ton; and Lykens Valley, \$3.75 per ton; which said prices are to be observed by the producers specified in paragraph 4 of the President's proclamation of August 23, 1917.

And it is further ordered that all other producers shall sell Pennsylvania anthracite pea coal at maximum prices not to exceed the above mentioned maximum prices by more than 75 cents per ton of 2,240 pounds.

### Anthracite Shipments

The shipments of anthracite for the month of September, 1917, as reported to the Anthracite Bureau of Information at Wilkes-Barre, Pa., amounted to 6,372,756 tons, an increase of 828,680 tons over the corresponding month

in 1916, and were only 676,281 tons less than the largest tonnage shipped in any previous month. This is a most satisfactory showing in view of the fact that September had five Sundays and one holiday, leaving only twenty-four possible working days.

The total shipments for the nine months of this year amounted to 57,778,097 tons, an increase over the corresponding period of last year of 7,847,681 tons, or almost 16 per cent; and exceeds the ten months' shipments of 1916 by 1,977,477 tons.

## GOVERNMENT AGENCIES COMBINE TO PUSH FUEL CONSERVATION

The conservation section of the Fuel Administration, under the immediate direction of P. B. Noyes, is rapidly organizing the numerous existing agencies for reaching the people of the United States into a unitary system to be used in addition to the State Fuel organization for obtaining information as well as giving effect to plans for conservation.

There are in the United States many patriotic societies, chambers of commerce and other organizations, both competent and eager to aid in the conservation of fuel. It will be the task of the Fuel Administration to concentrate and unite these agencies upon this important problem.

The preparation of conservation material, both technical and otherwise, is well advanced. The Bureau of Mines, represented by Professor O. P. Hood, the Geological Survey, and the Engineering Council, of which Dr. Ira N. Hollis, of Worcester, is president, will furnish the Fuel Administration practical rules and directions to be used in the education of the people in the economical use of coal.

The combination of reliable information and efficiency publicity will soon be an immense factor in fitting the coal production of this country to the necessary war consumption, it is believed.

### Growth of Coal Industry Phenomenal

"The coal mining industry of the United States, in its phenomenal growth has nearly doubled during each succeeding decade for the past eighty years. It has had to do more than keep pace with the increasing population of the country, for it supplied less than one ton of coal per capita to the American people in 1870, but had to supply six tons per capita in the year 1917.

"In the coal mining industry there are now employed some 700,000 miners who work at 7,000 different mines and produce yearly about 600,000,000 tons of coal."—Extract from the address of Van. H. Manning, before the Fuel Administrators.



### TEXT OF AGREEMENT SIGNED BY JELICO OPERATORS AND MINERS

Rembrandt Peale, the representative of the bituminous operators on the staff of the Fuel Administrator, drew up the following agreement and succeeded in having it signed by the representatives of operators and of the miners in the southwestern Kentucky and eastern Tennessee districts:

"As a result of a series of conferences held in Washington, looking to the adjustment of all disputes between the operators and miners of southeastern Kentucky and eastern Tennessee, and with the joint request of the representatives of the miners and operators, I recommend the following agreement between all parties at interest:

"In any dispute arising under this agreement the employes shall have the right to take the question up with the mine foreman, and in the event of a disagreement the matter shall be referred to the mine committee and the company official. If they disagree it shall be referred for final settlement to a joint board, composed of two representatives of the operators and two representatives of the miners and an umpire.

"Any grievance referring to the joint board must be disposed of within thirty days from the time the case is submitted to the board. Pending the adjustment of any grievance the miners and mine laborers shall continue at work.

"The umpire shall be a disinterested person and shall be chosen by the representatives of the miners and operators on the joint board. If they fail to agree on a permanent umpire within a reasonable time then said umpire shall be appointed by Dr. H. A. Garfield, fuel administrator. The term of the permanent umpire shall continue during the life of this contract.

"The following questions in dispute shall be referred to a special board of arbitration as hereinafter provided for:

"(a) The question of an advance in wages, tonnage rates, yardage and dead work.

"(b) The question of the hours of labor and the working conditions.

"(c) The question of the maintenance of check weighmen.

"The special board of arbitration to determine the foregoing questions shall be composed of two representatives selected by the miners, and two representatives selected by the operators, and Rembrandt Peale, who will act as the fifth member and umpire.

"This board shall begin its sittings within ten days after this contract is ratified, and shall remain in continuous session until a decision has been reached on all points referred to them.

"The operators agree to arrange their tips so that the coal may be weighed within one year, or sooner if possible.

"The mines to resume operation upon the ratification of this agreement.

"The terms of this contract shall be for the duration of the war, except as to wage rates which may be subject to change by the special arbitration board herein provided, at such time only as the Government may change the price of coal f. o. b. mines."

### STATE FUEL ADMINISTRATORS MEET WITH DR. GARFIELD

State fuel administrators and many members of their advisory committees attended a conference October 26, called by Dr. H. A. Garfield, the fuel administrator, for discussion of problems of coal distribution. The duties of the administrators were outlined by Dr. Garfield, L. A. Snead, head of the Fuel Supply Department; P. B. Noyes, head of the Conservation Department; W. E. Hope, head of the State Organizations Department, and other Fuel Administration officials.

Dr. Garfield read the following letter from President Wilson expressing his appreciation of the services of the State administrators:

"May I be permitted to express to the Federal Fuel Administrators for the respective States, many of whom I understand are in Washington for conference today, my appreciation of their generous action in contributing their services to the furtherance of this important and vital work. It constitutes another instance of the unselfish devotion by some of the country's ablest men of their time and thought to the solution of the difficult problems brought on by the war in which our whole force as a nation is now engaged.

"Please convey to those assembled my earnest good wishes for the complete success of their efforts in this great undertaking."

The subjects taken up included State organization, retail prices, emergency supplies, car supply, conservation of fuel and general discussion of the coal situation.

### Consumers Can Do Their Bit

"If the consumers can be aroused to an intelligent consideration of the burning of coal, they can begin to save 10 per cent of the production (600,000,000) at once. With more effort, through instruction and a moderate remodeling of coal burning equipment, which could all be accomplished during the war, a further considerable saving can be made. The possible coal saving when present practice is compared with the best ideal practice, is very large. If it were possible to supply the need of this country for light, heat and power through the highest type of mechanical devices, and if we could make a skilled coal user out of the average user, we could probably get along with half as much coal as we are now consuming."—Extract from address by Van. H. Manning, before the Fuel Administrators.



## PETROLEUM'S IMPORTANCE BROUGHT OUT CLEARLY

**J. D. Northrup, in Comprehensive Summing  
Up of Situation, Urges Conservation of Gas-  
oline Supplies**

Among the mineral substances that contribute to the successful conduct of modern warfare petroleum occupies a position of great importance, says J. D. Northrup, of the Geological Survey, in discussing the petroleum situation. Continuing he says: In its crude or semirefined state petroleum is the most efficient and economical fuel available for the propulsion of battleships, torpedo boats, transports, and merchant vessels and has been adopted for this purpose by the great navies of the world. Behind the first line of defense oil is the principal fuel of many large industrial plants and of many railroads of strategic importance whose lines traverse sections of the country that are devoid of other fuel resources.

Of even greater industrial importance than petroleum itself are the products derived from it. Gasoline is the principal fuel of internal-combustion engines and as such is an essential requirement for the operation of automobiles, motorcycles, autotrucks, airplanes, armored cars, and motor boats. Mineral lubricants are required wherever machinery is operated. Kerosene is utilized as a fuel in the camp kitchen and as a source of light where other illuminants are not available. Engine distillate is a necessary fuel for engines of the Diesel and semi-Diesel type utilized on undersea and surface craft. Paraffin wax is becoming increasingly important as a surgical dressing, and in the realm of therapeutics the places of cymogene, rhigolene, and petrolatum, both solid and liquid, have long been fixed.

Even a casual review of these principal applications of petroleum in modern warfare is sufficient to indicate the vital necessity to a warring nation of an abundant supply.

The entrance of the United States into the European conflict as a belligerent on the side of the Entente powers has given this struggle the status of a world war. The opportunity of supplying our allies with petroleum and its products has now become a duty that the petroleum industry of this country must exert itself to the utmost to fulfill. To the task set before it this industry brings an equipment of oil-transporting and oil-refining facilities adequate to meet normal requirements and capable, if adequately supplied with iron and steel, of rapid expansion to any magnitude that may be justified by the quantity of crude petroleum available. The principal question is whether or not the sources of crude petroleum in the country can meet the demands that must be made on them both at home and abroad. Their capabilities in this

regard have already been touched on in the foregoing discussion of individual fields.

On the whole the outlook is not such as to encourage optimism in view of the fact that the present rates of oil production and of oil consumption in the United States are approximately equivalent and that the total reserves of crude petroleum held by pipe-line companies and large refineries were depleted to the extent of nearly 15,000,000 barrels in the last half of 1916. The total surface reserve of crude petroleum in the United States on January 1, 1917, is estimated at 175,000,000 barrels, a quantity none too large to stabilize conditions in an industry that requires 25,000,000 barrels of oil a month for current needs.

If normal demands for petroleum products can barely be met by current production of crude oil, supplemented as to gasoline supply by the contributions of the casing head gasoline industry, the abnormal demands occasioned by the entrance of the United States into the world war render imperative an immediate increase in production. From a review of the fields in which, it appears reasonable to believe, well-directed effort would result in prompt and substantial gains in production, Kentucky, Oklahoma, the Gulf field, Wyoming, and the shale area of western Colorado and eastern Utah stand forth as most promising. To effect the increase that seems possible in these areas, however, and in fact to maintain production at the present rate (July, 1917), it is necessary that the existing famine in pipe, casing, and drilling supplies be remedied at once. Proved areas, no matter how productive of oil, can not be developed without casing, nor can oil be marketed efficiently without pipe lines. This fact can not be too strongly emphasized. The potential yield of the Irvine pool, Estill County, Ky., has been estimated as high as 4,500,000 barrels a year. Petroleum is now being marketed from this pool at the rate of only 1,500,000 barrels a year because of a lack of pipe-line facilities.

Oklahoma is plentifully supplied with refining facilities and with ample pipe-line outlets to the Atlantic and Gulf seaboard and includes within its borders the Osage Indian Reservation, the unleased portion of which constitutes one of the prospectively richest sources of petroleum in the United States. Development in Oklahoma and Kansas is seriously retarded by the acute famine in well casing and other drilling supplies. The same condition prevails in Texas and Louisiana, where considerable territory, both proved and prospective, remains undrilled. In Wyoming field development and oil production are now in excess of transportation and refinery facilities, but this discrepancy is being remedied as rapidly as practicable by the construction of new pipe lines and by the enlargement of existing refineries. Betterments now in progress will result before the end of 1917 in plac-



ing the Wyoming and Colorado branches of the petroleum industry in a position to supply a larger proportion of the domestic requirements of petroleum products of the Middle West and Rocky Mountain regions than in the past and thus release for eastern consumption or export more of the output from Mid-Continent and Appalachian sources.

Though representing a vast resource of petroleum, the oil shales of Colorado and Utah can not be considered an emergency source of oil. Methods of mining, crushing, and retorting the shale are yet to be developed. Pipe lines must be constructed to existing refineries or new plants erected near the sources of supply. Unknown difficulties must be overcome before the shale-oil industry can either supplement or supersede the crude-petroleum industry.

In consideration of the steadily increasing demand for petroleum and its products both at home and abroad and of the primary dependence not only of this country but of its allies on the sources of petroleum in the United States for aid in the successful conduct of the war, it is obvious that a serious shortage in the supply of motor fuel is imminent. This famine can be deferred by the exercise of strict economy in the utilization of the supply now available by every operator of a motor vehicle in the country and by the curtailment of the use of gasoline-driven vehicles for pleasure and for such business purposes as can not be efficiently accomplished by the substitution of electrically propelled vehicles. It may be still further deferred by the substitution in a multitude of small plants of one kind or another throughout the country of water, steam, or electric power for that now derived from gasoline.

No commercially practicable substitute for gasoline as a motor fuel has yet been discovered or devised, nor can it be expected that one will be made available in time to assist the United States and its allies in winning the war.

In the light of this fact, the conservation of existing gasoline supplies and the discovery and development of new sources of petroleum stand forth as opportunities for patriotic service that are presented to a surprisingly large proportion of the population of this country and that can not be ignored under penalty of an irreparable loss in the fighting efficiency of this Nation and of the nations with which it is leagued in the greatest conflict the world has ever known.

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E. S. Bastin, a geologist of the staff of the United States Geological Survey, is lecturing on geology at the Massachusetts Institute of Technology, during the absence of Professor Waldemar Lindgren.

## STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CON- GRESS OF AUGUST 24, 1912

Of THE MINING CONGRESS JOURNAL, published monthly, at Washington, D. C., for October 1, 1917.  
City of Washington, } ss:  
District of Columbia. }

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared J. F. Callbreath, who, having been duly sworn according to law, deposes and says that he is the editor of THE MINING CONGRESS JOURNAL, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:  
Name of Publisher—The American Mining Congress.

Postoffice address—Washington, D. C.

Officers:

Walter Douglas, President, 99 John street, New York.

Charles M. Moderwell, First Vice-President, McCormick Building, Chicago.

George H. Crosby, Second Vice-President, Duluth, Minn.

L. A. Friedman, Third Vice-President, Lovelocks, Nev.

J. F. Callbreath, Secretary.

Editor—J. F. Callbreath.

News Editor—Paul Wooton.

Business Manager—E. Russell Coombes.

2. That the owners are (give names and addresses of individual owners, or, if corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock): The American Mining Congress—a corporation, not for profit. No stockholders.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are (if there are none, so state): None.

J. F. CALLBREATH,  
By E. Russell Coombes,  
Business Manager.

Sworn to and subscribed before me this 9th day of October, 1917.

(Seal.)

O. G. CLAXTON.

(My commission expires August 1, 1922.)

## Not to Buy Nitrates

The Secretary of War has authorized the following announcement:

"Statements having appeared in certain publications indicating that the United States is intending to make at once very large purchases of sodium nitrate for the purpose of immediately establishing a war reserve of 500,000 tons of that material, the Secretary of War authorizes the denial of such intention. No such large purchases have been made or are contemplated, but on the contrary practically all the sodium nitrate which it has been planned to procure for the gradual building-up of the war reserve which has been in progress for years has already been contracted for."



## EXPLOSIVES ACT ABOUT TO BE PUT INTO EFFECT

### Bureau of Mines Lays Careful Plans for Putting Nation-wide Licensing System into General Use

All arrangements were being pushed to conclusion, as this issue goes to press, for the licensing of those handling explosives. The Bureau of Mines, the Government agency charged with the administration of this important act, has worked out its plans with great care. To get the opinions of those most concerned a conference was called by Van H. Manning, the director of the Bureau of Mines.

In opening the conference, Director Manning said:

"The purpose of this conference is to consider the framing of a set of rules and regulations under this 'Act to prohibit the manufacture, distribution, storage, use, and possession in time of war of explosives, providing regulations for the safe manufacture, distribution, storage, use and possession of the same and for other purposes.'

"All departments of the Government are concerned. Mr. DeWolf will preside at this meeting to consider the tentative rules and regulations drafted in this office. These are by no means perfect as they stand; and before they are finally submitted to me for transmittal to Secretary Lane for approval, I want them endorsed by every man here.

"I want to thank you for your generous attendance, and to ask for your hearty and thorough cooperation."

Assistant Director F. W. DeWolf then said:

"We have present, in response to Mr. Manning's invitation, representatives of explosives manufacturers, coal mine operators, metal mine operators, quarrymen and others. All government departments have been asked to be represented. The representatives of the United Mine Workers of America were unfortunately unable to be here, but are in full accord with us. There is a representative of the Western Federation of Miners, of the National Council of Safety; and various municipalities are represented by their police or fire officials. There are here also representatives of the War Trade Board, the Department of Justice, the Interstate Commerce Commission, the American Railway Association, as well as a number of individuals whose relation to this work is important.

"We are all pleased that the attendance is so large this morning; yet I have letters from many important men expressing their regret that they could not arrange to be present.

"We have here a draft of some regulations, rather general in outline, and following closely the wording of the law itself, which has been

prepared for your consideration in this office. There is also another set of proposed rules and regulations submitted by Mr. Jones and Mr. Coyne, which I understand goes more into detail. Both sets are to be considered."

Some extracts from the discussion are as follows:

E. Stewart (Department of Labor); "It has occurred to me, and I would like to make the suggestion, that it is not competent, for the Bureau of Mines to issue rules. More than four-fifths of all the points taken up in the draft which has just been read are simply transcripts of the law. It is very confusing, and I would like to suggest that the subject of regulations and licenses be entirely divorced from the law itself. It is not competent for the Bureau of Mines to issue a law as rules in this form."

Geo. S. Rice, chief mining engineer, of the Bureau of Mines: "Don't you think it is a little unwise to attempt right at this stage to interpret the law? It would seem to me rather dubious at best to attempt explanations in the rules of what are interpretations of the different sections of the law. It would seem to me much safer to leave interpretations to the court and defer this matter."

Mr. Hammer (chief of the Bureau of Fire Prevention of New York City):

"There is a serious conflict with municipal regulations. I think provision should be made that no license shall be issued in the matter of explosives or their ingredients in violation of any law of municipality, state or territory.

"We have in the city of New York a very elaborate set of regulations governing particularly the use of explosives. In New York City last year over a million pounds of dynamite were used. On account of the extreme danger in a built-up community extra precautions must be taken for safety which are essential for a city such as New York. It greatly increases the expense for the use of explosives in New York City, whereas in other sections of the country it would not be justified. In order to avoid any possible doubt as to the continued existence of those regulations in New York and in other congested communities where they have them and need them, I suggest if it is in order:

"No license shall be deemed to authorize the manufacture, transportation, storage or sale of explosives or ingredients in violation of any law of a State, territory, or political subdivision of a State or territory."

"I think it is called for. The effect of this act and these rules would be to provide a substitute for local regulations. Yet I am satisfied that there would be some confusion at any rate in the lines of those who manufacture, transport, offer for sale, or use explosives and their ingredients. I think this would eliminate that confusion."

Mr. Jones: "I can see here that there would be a conflict between this law and the muni-



cidental regulations. I believe we would conserve safety in these rules by following as closely as we can such modern rules and regulations as some of the modern cities have."

Mr. Marshall (anthracite coal operators): "I feel that operators should take up this matter and show in what way the law can be administered without injury to the industry. A committee should be appointed of the anthracite coal operators to study this matter. The situation presented is very complex. Miners going into the mines with large quantities of explosives present a question. How can we apply the law with safety and what knowledge can we have of the use of what has been distributed to these miners? We are all trying to get all the coal we can and we don't want to do anything to interfere with the legitimate use of explosives but at the same time we want to afford the protection contemplated by this act. We should do something so as to make suggestions of a practical nature to carry into effect with safety the use of high explosives."

Those in attendance at the explosives conference were:

*Representatives of explosives manufacturers:*

Wm. Coyne, vice-president, Du Pont Powder Company, Wilmington, Del.; E. B. Jones, Du Pont Powder Company, Wilmington, Del.; C. A. Patterson, Du Pont Powder Company, Wilmington, Del.; A. C. Blum, general sales manager, Aetna Explosives Company, 120 Broadway, New York; J. S. Burton, Grasselli Powder Company, Cleveland, Ohio; J. W. Mathews, director of sales, Atlas Powder Company, Wilmington, Del.; Thomas J. Laffey, general counsel, Atlas Powder Company, Wilmington, Del.; G. G. Rheuby, Hercules Powder Company, Wilmington, Del.; Axel P. Ramstedt, comptroller, Hercules Powder Company, representing mine operators of Coeur D'Alene Mining District of northern Idaho, Wallace, Idaho; Henry G. Pain, fireworks, 18 Park Place, New York City; Ed. J. Bingle, consolidated Fireworks Company of America, New York, Detwiller & Street Fireworks Mfg. Co., New York; A. L. Drie, Fireworks Company, Reading, Ohio; St. Louis Fireworks Company, St. Louis, Mo.; W. S. Topping, assistant chief inspector, Bureau of Explosives, 30 Vesey Street, New York City; C. P. Beistle, chief chemist, Bureau of Explosives, South Amboy, N. J.

*Representatives of Coal Mine Operators:*

*Anthracite:*

S. D. Warriner, general manager, Lehigh Coal & Navigation Co., 437 Chestnut Street, Philadelphia, Pa.; C. F. Huber, general manager, Lehigh & Wilkes-Barre Coal Co., Wilkes-Barre, Pa.; W. J. Richards, president, Philadelphia & Reading Coal & Iron Co., Philadelphia, Pa.; John Marble, president, G. B. Marble Company, Anthracite Coal Operators, Jeddo, Pa.

*Bituminous (Non-Union):*

Walter H. Glasgow, assistant general superintendent, H. C. Frick Coke Company, Scottsdale, Pa. (subsidiary of U. S. Steel Corporation).

*Representatives of Metal Mine Operators:*

C. F. Kelley, Anaconda Copper Mining Co., 42 Broadway, New York; R. M. Catlin, eastern manager of mines, New Jersey Zinc Company, Franklin, N. J.; A. T. Thomson, assistant to the president, Phelps Dodge Corporation, 99 John St., New York City; Chas. S. S. Bates, representing Phelps Dodge Corporation, Westory Bldg., Washington, D. C.

*Representatives of Quarries:*

Daniel Baker, president, The Standard Lime & Stone Co., The Washington Building Lime Company, 524 Equitable Bldg., Baltimore, Md.; Daniel Baker, Jr., assistant secretary and treasurer, The Standard Lime & Stone Co., The Washington Building Lime Company, 524 Equitable Bldg., Baltimore, Md.; John A. Kling, president, The Kelley Island Lime & T. Co., Cleveland, Ohio; Wm. H. Baker, assistant general superintendent, Atlas Portland Cement Company, Hannibal, Mo.

*Representatives of Municipalities:*

*Police:*

Maj. Raymond W. Pullman, Metropolitan Police, Washington, D. C.; Capt. T. J. Tunney, commander bomb squad, New York City; W. H. Westbrook, first deputy superintendent of police, Room 306, City Hall, Chicago, Ill.; C. L. Grant, inspector, Metropolitan Police, Washington, D. C.; Robert D. Carter, marshal of police, Baltimore, Md.; C. G. Kizer, chief of police, Norfolk, Va., secretary, International Association of Chiefs of Police; W. N. Mathews, superintendent of police, Pittsburgh, Pa.

*Fire:*

P. W. Nicholson, fire marshal, D. C. Fire Department, Washington, D. C.; Geo. W. Elliott, chief fire marshal, Room 386 City Hall, Philadelphia, Pa.; Joseph Burrow, State commissioner of insurance and ex-officio State fire marshal of Virginia, Richmond, Va., representing by request Hon. L. T. Hussey, State fire marshal of Kansas and president of fire marshal's Association of North America; J. O. Hemmitt, chief, Bureau of Fire Prevention, Fire Department, New York City; Joseph Button, representing L. T. Hussey, president, Fire Marshal's Association of North America; Robert W. Hargadine, 94 North Cleveland Ave., St. Paul, Minn. (formerly State fire marshal, St. Paul, Minn.), representing State auditor.

*Representing Manufacturing Chemists:*

Henry Howard, chairman executive committee, Manufacturing Chemists Association of United States, Merrimac Chemical Company, Boston, Mass.

*Representing Railways:*

C. A. Buch, representing J. G. Rogers, general agent of American Railway Association, 719 13th St., N. W., Washington, D. C.

*Representing U. S. Government:*

Frederic V. Abbot, brigadier general, Corps of Engineers, office, Chief of Engineers, U. S. Army, Washington, D. C.; J. H. Burns, major, Ordnance Department, U. S. Army, 1330 F St., Washington, D. C.; G. L. Caskey, lieutenant commander, U. S. Navy, Bureau of Ordnance, Navy Department, Washington, D. C.; T. S. Wilkinson, lieutenant, U. S. Navy, Bureau of Ordnance, Navy Department, Washington, D. C.; J. H. Vawter, electrical engineer, Office Supervising Architect, Treasury Department, Washington, D. C.; Wm. P. Bartel, examiner, Interstate Commerce Commission, Washington, D. C.; Ethelbert Stewart, chief statistician, Bureau of Labor, Washington, D. C., representing Department of Labor, under direction of Secretary of Labor.; Dr. A. E. Taylor, representing the War Trade Board, Washington, D. C.; L. E. Young, Bureau of Mines, Washington, D. C.; Dr. Chas. E. Munroe, Bureau of Mines, Washington, D. C.

**INCREASE IN SCHEDULE****ALLOWED MICHIGAN MINES**

The Fuel Administrator announced, October 26, bituminous coal mine prices for the State of Michigan as follows:

Run of mine, \$3.15; prepared sizes, \$3.60; slack or screenings, \$2.20.

Michigan prices were not fixed in the original order by President Wilson dated August 21 or in the reclassification of October 1.

Further classifications in other States were announced as follows:

Montana.—New prices: Prepared sizes, \$3.60; slack or screenings, \$1.50. Old prices: Prepared sizes, \$2.95; slack or screenings \$2.45.

Arkansas (Paris field).—New prices: Prepared sizes, \$4.50; slack or screenings, \$2.00. Old prices: Prepared sizes, \$2.90; slack or screenings, \$2.40.

Illinois (McLean Coal Company, Bloomington).—New prices: Prepared sizes, \$4.00; slack or screenings, \$1.70. Old prices: Prepared sizes, \$2.65; slack or screenings, \$2.15.

Missouri (Putnam county and Longwall thin seam mines in Randolph county).—New prices: Run of mine, \$3.15; prepared sizes, \$3.40; slack or screenings, \$2.90. Old prices: Run of mine, \$2.70; prepared sizes, \$2.95; slack or screenings, \$2.45.

E. E. Grant announces his resignation from the position as secretary of the Independent Oil Men's Association, to take effect October 15, after which date he will be associated with the Fred G. Clark Co., with headquarters at Tulsa, Okla.

**DISTRIBUTION RECOGNIZED  
AS THE BIG PROBLEM****Fuel Administration Outlines Program It  
will Follow to Speed up Delivery of Coal**

The Fuel Administration is giving intensive consideration to the problem of distribution. The program as announced October 19, is briefly as follows:

1. To provide an adequate and regular supply of fuel to the railroads, which is indicated by the order issued in connection with fuel supply of the Pennsylvania Railroad, which has been extended to include the Baltimore & Ohio Ry., and will shortly be applied to other roads, as obviously the railroads cannot be expected to move the enormous amount of freights which they must handle, unless they are provided with sufficient fuel with which to do so, and it is in the interest of the conservation of equipment that this supply be obtained regularly from mines in close proximity to where the coal must be used. This will avoid the necessity as is now the practice, of holding several thousand cars of coal under load, for fuel purposes. It will also eliminate the necessity of transporting coal from one district to another, which will result in a saving of both cars and motive power, of which the railroads are short. It will further avoid confiscation of coal, which has been necessary in some instances in order to provide the railroads with sufficient fuel.

2. When the adequate and regular supply of fuel had been accomplished, we expect to issue a rule confining coal cars to the coal trade, with such exceptions as are proven necessary, and to compel the return of empty coal cars to the originating line.

3. The matter of preference in movement of coal cars, both loaded and empty, over other slow freight is receiving consideration, and it will undoubtedly be necessary to issue a rule at an early date, that preference be given to food and fuel. The situation today is the railroads are congested, and are unable to move to the market the coal which is offered them for transportation. This is due to the enormous amount of freight which they are called on to handle. We believe the program thus briefly outlined, when put into effect, will result in an increased car supply to the mine, and will accomplish an increased production sufficient for necessary requirement.

**Issue Buyers' Guide**

A splendidly printed pamphlet, entitled "Complete Buyers' Guide," has just been issued by the Charles A. Schieren Company, of New York. An article in this pamphlet on "The Care of Belting" contains in concise form information of great value.



## PETROLEUM SUPPLIES ADEQUATE FOR THE WAR

### Each Group of Contestants is Fairly Well Off —Central Powers Probably Have Enough Oil for Necessary Uses

The world's production of crude petroleum in 1916 was 460,639,407 barrels of 42 gallons each. Of this production there was available to the Central Powers the entire output of Germany, estimated at 140,000 metric tons (995,764 barrels), the entire output of Galicia, estimated at 6,461,706 barrels, and an indeterminate quantity of storage oil from the Roumanian fields, obtained with the capture of Constanza. Estimating this latter at about 1,500,000 barrels, the apparent supply of petroleum available to the Central Powers in 1916 was about 9,000,000 barrels. From this oil it is estimated that at least 2,000,000 barrels, or 85,000,000 gallons of motor fuel was recoverable. These and the following facts were compiled by J. D. Northrup, the geologist in charge of petroleum resources for the Geological Survey.

The reported thoroughness of the destruction of wells and producing oil property in the Roumanian fields in October, 1916, by Colonel Griffiths, of the British Army, leads to the belief that practically no oil was obtained in 1916 from Roumanian wells subsequent to the occupation of the oil fields by the armies of the Central Powers, early in November, and that the only important supplies of storage oil obtained by the Central Powers were those captured at Constanza. The destruction of the Roumanian fields is believed to have been so thorough that oil production of consequence is believed impossible without the expense and delay incident to drilling new wells. Recent reports indicate that a few wells in the Roumanian fields have been successfully cleaned and put on a producing basis, but that their output is small, the development of consequential production awaiting the completion of new wells now drilling.

Prior to the Austro-German occupation the Roumanian fields were producing oil at the rate of about 12,000,000 barrels a year. If reports are true concerning the extent of their destruction, it will be years, if ever, before this rate of production can again be attained. A complete statement of the damage done in these fields by the Allied forces will probably not be available before the end of the war, but it is generally understood that most of the important wells were dynamited. Unless the charges were powerful enough to shatter the well and admit salt water to the oil-bearing sands, production could be restored by the simple expedient of drilling new wells, assuming that an ample supply of drilling equipment could be obtained. It is reasonable to suppose that there has been more or less flooding, and there is more basis for belief that it was serious than the contrary.

Production in Galicia will doubtless steadily

increase to possibly 10,000,000 barrels in 1917, and in Roumania it is conceivable that production may be restored to the extent of 2,000,000 barrels. In Germany itself the annual production of 1,000,000 barrels will doubtless be fully maintained. A supply of 13,000,000 barrels of oil in 1917, though small in comparison to the obvious needs of the Central Powers, can probably be made to suffice for necessary uses.

#### ENTENTE POWERS

Of the remaining 451,000,000 barrels of oil produced in the world in 1916, there was produced in the countries now at war with the Central Powers approximately 396,500,000, the balance coming from neutral countries so situated as to be unable to supply any part of their product to the Central Powers. Of this total supply none is produced either in England or in France, where it is most needed. Russia, with a production of 73,000,000 barrels of oil in 1916, has been so situated as to be unable to supply any of the needs of her allies since the closing of the Dardanelles early in 1914, and, in fact, has little, if any, oil to spare over and above her own needs. The Roumanian supply of 10,000,000 to 12,000,000 barrels a year is no longer available in any part to Russia or to England and France. These latter countries are essentially dependent on oversea supplies, though the shale oil industry together with local refineries operating on imported crude in England, are credited with ability to supply in excess of 1,000,000 gallons of motor fuel a year.

Judging from available statistics of petroleum imports, the United Kingdom requires about 45,000,000 gallons, a little over 1,000,000 barrels of petroleum products, monthly, and France about 25,000,000 gallons, or say 600,000 barrels a month.

In 1916 the United Kingdom imported petroleum products from the United States, Mexico, Dutch East Indies, Canada, India and Trinidad. Of 196,759,001 gallons of motor fuel imported in that year, the United States furnished 94,451,764 gallons, Mexico furnished 12,403,620 gallons, the Dutch East Indies, 87,635,329 gallons and other countries, 2,268,288 gallons.

The bulk of the French imports of motor fuels in 1916, aggregating 115,122,336 gallons, came from the United States, which in that year exported a grand total of 187,942,021 gallons of gasoline and naphtha.

Petroleum production in the United States is now at the average rate of 27,500,000 barrels a month, and the production in 1917 will greatly exceed that in any preceding year in the history of the industry.

Mexico exported in excess of 20,000,000 barrels of petroleum in 1916, and is now exporting oil at the rate of about 2,500,000 barrels a month, indicating a production in 1917 of about 40,000,000 barrels.

Trinidad is reported to be exporting petroleum at the rate of about 1,500,000 barrels a



year. India exported last year, according to available reports, 33,600,000 gallons of petroleum oils, of which about 30,000,000 gallons was motor fuel consigned to the United Kingdom and supplied in part to the expeditionary forces in Egypt and Mesopotamia. Its 1917 contribution will probably be equal or greater. No appreciable diminution of petroleum output is expected in the Dutch East Indies.

It is evident, from this brief review, that an ample supply of petroleum is available to the Entente Powers in the oil-producing countries of the world, its employment for the purpose of carrying on the war depending on the adequacy of ocean transport.

### **PRIORITY ORDER SUSPENDED FOR TWENTY-FOUR HOUR PERIOD**

Suspension of Priority Order No. 1, for a period of 24 hours was announced October 26, as follows:

"Please take notice that Order No. 1 issued on the 20th day of August, 1917, by the undersigned, by virtue of appointment by the President under the Act of Congress entitled 'An Act to Amend the Act to Regulate Commerce, as Amended, and for Other Purposes,' approved August 10, 1917, awarding priority to the extent specified in said order with respect to the transportation of bituminous coal for transshipment by vessels to ports on Lake Superior and Lake Michigan shall be and said order is hereby suspended at the request of the Fuel Administrator for the period of 24 hours from midnight on Sunday, the 28th day of October, until midnight, Monday, the 29th day of October, 1917, at the expiration of which period said Order No. 1 shall immediately again become and remain in full force and effect according to its original terms, except as to slack coal, until further ordered."

### **INCREASE IN COAL PRICE ALLOWED NEW MEXICO MINES**

The United States Fuel Administration announced today that it would reclassify bituminous coal mines in the Raton district of New Mexico, putting prices in this field on a par with those in the Trinidad district of Colorado. The two fields are virtually the same, divided only by the line between the States.

The Raton field prices are the same now as for the rest of New Mexico, namely, for run of mine, \$2.40; prepared sizes, \$2.65; slack or screenings, \$2.15. The new prices will be: for run of mine, \$2.75; prepared sizes, \$3.25; slack or screenings, \$2.00.

THE MINING CONGRESS JOURNAL is particularly gratified at the election of Dr. Victor C. Alderson as president of the Colorado School of Mines.

### **JOBBER'S COMMISSION IN NO CASE TO GO TO OPERATOR**

The United States Fuel Administration has made public a number of rulings by Fuel Administrator Garfield. These rulings have been made in specific cases that have been brought before him and will afford a basis of precedent whenever similar questions are brought up in the future. The rulings are as follows:

Operators who maintain their own sales department, whether in their own name or under a separate name, and dispose of coal directly to the dealer or consumer, are not to be regarded as "jobbers," and may not charge the jobbers commission specified in the President's Proclamation of August 23. A jobber must be entirely independent of the operator, in fact as well as in name, in order to be entitled to charge a jobbers commission.

Free coal shipped from the mines subsequent to the promulgation of the President's order shall reach the dealer at the price fixed in the President's order, plus only a proper jobber's commission (if coal has been purchased through a jobber) and transportation charges; Provided, however, that in no case shall the jobber's commission exceed 15 cents per ton of 2,000 pounds.

Coal from wagon mines, or coal delivered from mines direct to the consumer by wagon or truck, may be sold at the President's price plus a sum representing the cost of hauling.

Coal bought by a railroad for its own use as fuel from a wagon mine, may be sold at the President's price plus a sum representing the cost of hauling.

If the claim is made that any specific coal has been acquired by the dealer in accordance with a bona fide contract, enforceable at law, existing prior to the date of the order of the President applicable thereto, the burden of proof is upon the dealer and other parties to the contract to establish these facts.

The effect of the President's proclamation upon coal rolling when the proclamation was issued, is to be decided by first ascertaining whether or not the title had passed from the operator to the consignee at the time the President's proclamation became effective.

### **A Month Ahead of 1916 Production**

In the first three months of 1917 the coal production was somewhat behind that in 1916, but since the first of April, the cumulative production for 1917 has established a material lead over the corresponding figure for the previous year, the Geological Survey finds. The total production to and including August 31, 1917, is estimated at 363,500,000 net tons, as compared with 326,600,000 tons for the corresponding period in 1916, an increase of 36,900,000 tons. In other words, in the first eight months of 1917 the production of bituminous coal was nearly equal to that in the first nine months of 1916.



**NATIONAL COAL ASSOCIATION****PLEDGES AID TO DR. GARFIELD**

That the coal producers of the country stand ready to do everything possible to stimulate coal production, for the maximum operation of war industries and for other purposes, was the assurance given to Dr. Harry A. Garfield, fuel administrator, last month by the directors of the National Coal Association an organization composed of almost all the bituminous mine operators in the United States.

Facts, figures and data of every kind relating to coal costs, production and distribution will be placed at the disposal of the Fuel Administration, Dr. Garfield was informed. In order to facilitate this cooperation, the association has opened headquarters in the Southern Building in Washington, under the direction of J. D. A. Morrow, of Pittsburgh, as general secretary.

"The coal operators want to do all they can to keep up maximum production," Mr. Morrow told Dr. Garfield, "and we are ready to lay before you all the information at our command which you desire to carry on the work."

"One of the biggest problems which now is before the operators is that of transportation. This will necessarily grow worse as the winter months come on, when lake and certain river navigation is closed and when railroad operating efficiency is decreased by winter conditions."

"In this connection it is absolutely essential that the coal mines be given preference by the Priority Board in the distribution of coal cars. Large numbers of these cars now are being used to haul sand, gravel, brick, tile, slag, ashes, scrap iron, automobiles and other commodities, the movement of which is not so essential to the conduct of the war as the transportation of coal."

"Steps should also be taken in stimulating production, through putting a stop to labor troubles throughout the country, strikes and suspensions. Miners also should be impressed with the necessity of keeping on the job. With the present high prices being paid to miners many of them are content to work only three or four days a week, which obviously reduces the output of coal. The miners should be alert to the fact that they are just as essential to the success of the war as are the soldiers in the trenches."

After the conference, Mr. Morrow said:

"Dr. Garfield assured us that he appreciated the offer of support and approved the general plan of cooperation through our National Association and its Washington headquarters. At his request we already are preparing statistical information which he desires immediately."

After the conference Mr. Morrow was asked to comment on the reports that the coal operators are not satisfied with the prices fixed

by the Government, and that they would insist on a general increase.

"The National Coal Association," Mr. Morrow replied, "has sent out a call to mine owners generally to produce cost sheets for presentation to the Fuel Administration. The operators have been asked to make up these figures in a standard way, along lines which meet the approval of the Fuel Administration."

"We know that we can rely on the fairness of Dr. Garfield and his associates to make prices which will stimulate production and will be equitable to all concerned. He assured us that he would make adjustments promptly wherever justified."

"Prices, however, are not the only important question at present—what we are trying to do is to assist the Government in obtaining maximum coal production and distribution, in order to keep war industries going and to prevent a serious coal famine during the winter. That will require better service from labor and from the railroads."

**INCREASED PRICES ALLOWED****MINES IN JELICO DISTRICT**

Increased prices have been allowed by the Fuel Administrator as follows:

The counties of McCreary, Pulaski, Rockcastle, Jackson, Lee, Wolfe, Morgan, Lawrence, Johnson, Martin, Whitley, Laurel, Clay, Owsley, Knox, Bell, Breatgitt, Perry, Leslie, Harlan, Magoffin, Boyd, Carter, Pike, and all of Floyd, Knott and Letcher Counties, excepting coal produced from the thick vein Elkhorn District in these three counties, in the State of Kentucky, \$2.40,\* \$2.65,† \$2.15.‡

The counties of Scott, Campbell, Claiborne, Anderson and Morgan, in the State of Tennessee, \$2.40,\* \$2.65,† \$2.15.‡

Mines operated near St. Charles, Lee County, Virginia, by the Darby Coal Mining Company, Black Mountain Mining Company, Old Virginia Coal Company, United Collieries Company, Inc., and Benedict Coal Corporation, in the State of Virginia, \$2.40,\* \$2.65,† \$2.15.‡

**Ask Increase of Price Schedule**

Coal operators of the Fairmount, W. Va., field appeared before the Fuel Administration last month and asked that the price fixed for coal in their district be raised to meet a wage raise demanded by miners. The miners ask increases similar to those which recently were granted in the Central Competitive Field contingent on a raise in coal prices.

The operators presented estimates to show that from 28 to 39 cents will be added to the cost of producing coal if the wage increases are given.

\*Run of mine. †Prepared sizes. ‡Slack or screenings.

**GARFIELD TALKS ON TEXT:****"IS THERE SHORTAGE OF COAL?"**

H. A. Garfield, United States Fuel Administrator, answering the question, "Is there a shortage of coal?" declared it cannot be answered by a simple yes or no. "On the one hand," he said, "we have an increased production as compared with 1916 of nearly 10 per cent, and when compared with 1915, the increase is around 25 per cent. On the other hand we have a greatly increased demand from munition factories and other industries working on necessary government orders. The production of these factories is needed by ourselves and our allies if we are to fight the war successfully. In addition to this, the railroads must have more coal if they are to move the troops and supplies. Whether the increased demand will be met by an increase of supply which will also leave for the domestic consumer all the coal he needs will depend, first upon the car supply; second, upon the energy and patriotism of the miners, coal operators, and laborers; third, upon the loyal recognition by every citizen that he is responsible for conservation and limitation in the use of coal to the utmost possible extent.

"The question of car supply is put first, because, at the present time, the limitation of production of coal is influenced more by the inability of mines to get sufficient cars every day, so that they may operate continuously. Many of the largest mines are able to run at only half capacity much of the time, owing to the inability of the railroads to supply the necessary cars. The mine will run at full capacity one or two days of the week and at partial capacity for two more days and is unable to run at all the remaining two days, because there are absolutely no cars in which to put the coal as it comes out of the mines.

"The Fuel Administration as well as the railroads are working energetically on this problem of getting more cars to the mines, and there is every hope that this shortage will be gradually remedied. The problem of quick loading, quick emptying, and quick journeys from mine to destination have been receiving a great deal of attention by the railroads and mine experts as well as the Fuel Administration. Much is hoped also, from reducing the number of coal cars which are used throughout the country for gravel, stones and other purposes.

"Our production has shown a steady increase over last year's figures so that the total bituminous coal mined in 1917 will be about 50,000,000 tons greater than in 1916, and increased production of anthracite coal will show an even higher percentage.

"Complaints have been received from some mines that the increase in wages of miners has resulted in a falling off of production. It is charged that miners will quit work when they have earned a certain amount of money, during the week, and thus the higher wages

shortens the working time. In most cases where investigations have been made however, it is shown that the short time has resulted much more from the shortage of cars than from the unwillingness of men to put in full hours.

"It is the opinion of the Fuel Administration that if all the people will show the same patriotism in the use of coal which the miners and mine operators are showing in its production, there will be enough coal this year for all war purposes and still leave all that is necessary for domestic industries and for keeping the people warm."

**NATIONAL COAL ASSOCIATION****BELIEVES SITUATION SERIOUS**

Every effort was made by the National Coal Association to impress upon the operators the seriousness of the situation and the importance of the meeting which was held under its auspices at Pittsburgh, October 23. The board of directors met in Washington and went over the plans for the meeting carefully. In its calls for the meeting, the following statements were made:

It is deemed imperative that coal producers should meet in a general conference for consideration of the present conditions in the industry. The men in this business must see to it that sufficient coal is mined and shipped to meet the needs of the nation. At the same time, the industry must adjust itself to Government regulation, so as to insure the fullest cooperation between the operators on the one hand and the officials of the Government on the other. These conditions demand the best constructive action which this industry can devise.

The national association has given careful consideration to these matters and wishes to lay before you its tentative plans relating to them. These plans cover better transportation for coal, more efficiency from mine labor, reports to Federal authorities, cooperation with Government agencies, a public information service, and other important subjects. We want the benefit of your information, suggestions, and judgment in considering these plans. Decisions must be made at this meeting and work undertaken in consequence thereof which will vitally concern you and every other coal operator in the country, as well as the public and the Government.

**Issues Fine Catalogue**

While H. Channon & Co., of Chicago has had a reputation since 1875 of getting out one of the most comprehensive catalogues of machinery, tools and supplies, their latest effort in the line of a catalogue is even more remarkable than their previous work. The new catalogue contains 1,152 pages and is replete with splendidly selected cuts and diagrams.



## **MORE COAL BEING BURNED THAN IN ANY PREVIOUS YEAR**

Commenting on the status of coal production as revealed in the extensive statistical report issued recently by the Geological Survey, George Otis Smith, the director of that bureau, says:

"The general impression is that coal miners are producing less coal than usual and that the coal industry, taken as a whole, is almost in the slacker class. This is absolutely without foundation. While the rate of production has varied from week to week, it is nevertheless true that since April, the daily rate of production has always been in excess of that of last year. The statistical report prepared by C. E. Leshner shows a production of 35,000,000 tons in excess of the first eight months of 1916. This shows that any coal shortage is due to the fact that more coal is being burned than ever before, rather than from the mining of less coal than in previous years."

## **DISASTERS PREVENTED BY TIMELY EXAMINATION OF MINE AIR**

The Bureau of Mines, is quietly conducting a campaign preventative of explosions among the coal mines that is meeting with the enthusiastic cooperation of the operators and a general lowering of the death rate.

Its engineers are being sent to various mines, where, with the assistance of the management, they take samples of the air and also the coal dust. Visits are made to the mines at different times and on each occasion the samples are selected and tested in the laboratories to note the differences in the conditions in the mines. On several occasions, the first samples taken in a mine have disclosed conditions that ought to be remedied and the bureau's engineers have hastened to inform the managements confidentially of their findings and to make the necessary recommendations. In most instances the operators have followed these recommendations and have been thankful that their attention had been called to the situation before a disaster had occurred.

Where a mine has been examined, the engineers follow up their first report and recommendation and through other tests either learn that the mine is in safe condition or has become progressively worse. If the latter is true, further confidential reports are made pointing out the increasing danger to the mine.

As the size of coal dust and the proportion of inert material in it has an important bearing upon its likelihood to explode and start a disaster, and as this does not seem to be well known to many operators, the bureau makes a specialty of testing the samples of coal dust and notifying the operators of its degree of explosibility.

These reports to the operators have run

the gamut from advising the owners of the mine that precautionary measures should be taken to the point where the conditions found have been so alarming that immediate efforts are required to remedy the conditions.

Mine operators have appreciated the valuable services given and have advised the bureau that the improvements suggested have been adopted. In some mines they have abandoned open flame lamps entirely upon being shown the danger; others have increased their ventilation; and in most instances they have cleared up the coal dust in the roadways and sprinkled them to keep down the dust or taken other methods to render the dust harmless.

The Bureau of Mines, by reason of this plan of investigation of the explosion hazard at mines, is witness to the fact that improvements are constantly being made in the conditions of the coal mines and has the idea that it will result in greater security for the men and a corresponding decrease in the loss of life.

## **Coal Receipts at Chicago**

Figures supplied to the United States Fuel Administration by the Federal Trade Commission disclose that seventy coal dealers in Chicago received between April 1, 1917, and October 1, 1917, 252,791 tons more of bituminous and anthracite coal than during the same period in 1916. The increase in anthracite alone was 79,706 tons.

The total amount of coal of all kinds delivered to these dealers in the six months' period this year was 866,954 tons, against 614,163 in the same period last year. Anthracite delivered amounted to 252,219 tons, against 172,513 last year.

The stock of coal on hand in Chicago on October 1, according to sixty-three dealers' reports to the Trade Commission, was 160,414 tons, while their total amount of unfilled orders was only for 50,062. The sixty-three dealers had on hand 192,916 tons on October 1, last year. The sixty-three dealers had on hand on October 1, of this year, 57,844 tons of anthracite, against 110,412 tons last year, but this year their unfilled orders on October 1 amounted to only 13,579 tons. Their bituminous tonnage in yards was 49,647, against 33,648 last year.

## **Importance of Fuel Economy**

"The Bureau of Mines is charged with the investigations of the oil industry of the United States with a view toward lessening the loss and increasing the efficiency of production and use. While not as dramatic as the work of preventing accidents in the mines, fuel economy is one of the most important problems before the people today."—Extract from the address of Van. H. Manning, before the Fuel Administrators.



### **GARFIELD REFUSES TO YIELD TO PRESSURE EXERTED BY STRIKERS**

That Dr. H. A. Garfield, the fuel administrator, intends to be firm in handling strikes is indicated in the following telegram, which he sent to miners and operators in certain districts of Illinois, Indiana and Ohio on October 17:

"American citizens engaged in the mining of coal, whether operators or miners are, for the most part, mindful of the fact that our country is at war, and that the burden rests upon them to produce the coal needed without interruption. But there are evidently some who fail to understand the gravity of the situation and who do not hesitate to advocate strikes at the present time, as a means of forcing the Government at once, to decide whether the wage increase agreed to at the meetings recently held at Washington by the operators and miners of the Central District, should justly be covered by an advance in the prices fixed by the President. The matter has been submitted to me and all concerned are expected to cooperate. I am giving immediate and close attention to the question and hope to reach a decision at an early date. The only circumstance within my control which will delay that decision will be the violation of the spirit of the arrangement between the operators and miners which was that under no circumstances should the production of coal in the United States, at the present time, be allowed to diminish. If either the operators or the miners attempt to bring pressure upon me to reach a decision, I shall postpone it and use whatever powers are necessary to compel the production of coal to meet the country's needs."

The day previous he sent the following telegram to the miners and operators in the southwestern field:

"Newspaper statements that strikes have been ordered in the southwest districts known as districts 14, 21 and 25 have been confirmed by telegram. I am informed that the officers of your national association have appealed to you to use every effort in your power to avert a strike at this time, in view of the national situation and the great task imposed on President Wilson. I cannot too strongly reinforce this message. Strikes must not take place. If they have been ordered the order ought to be revoked at once. The terms of the agreement made at Washington between operators and miners are fair. I understand that the only clause objected to is the clause providing for penalty. It is just that this should be agreed to. I shall use every power committed to me to prevent strikes and warn you against allowing this order to stand. If you cannot compose differences with operators at home, meet me here in Washington, meanwhile keeping mines at work."

### **DEFINITE ALLOTMENT OF COAL FOR CANADA IS DECIDED UPON**

The Fuel Administration has completed statistics showing the fuel consumption of the Dominion of Canada during the past year and the future requirements of coal for the railroads, factories, public utilities and domestic consumers of that country. On the basis of these statistics a definite allotment of coal for Canada has been made. For the next two months these allotments will total about 2,000,000 tons of bituminous and 700,000 tons of anthracite.

Dr. Garfield has insisted that Canada be treated as well in the matter of coal as the States of the Union but no better. The figures now available reveal the fact that during the first nine months of this year coal has been shipped into Canada in much larger quantities than in former years, so that the allotments now being made for the different provinces of Canada will involve a limitation not only of the amount to be exported by individual shippers but of the aggregate tonnage going into Canada during the balance of the winter.

In order to control the situation effectually, the Fuel Administration is notifying individual shippers of the amounts of coal each will be permitted to export to Canada during November and December. From this time forward the shipment of coal into Canada will be under definite control by the Fuel Administration and only shippers with permits from the Fuel Administration will be allowed to export coal to that country.

### **LEAVENWORTH OPERATORS TO RECEIVE MISSOURI PRICES**

In classifying coal mines for application of coal prices fixed by President Wilson the Fuel Administration has ruled that coal taken out of the ground at Leavenworth, Kan., shall be regarded as Missouri coal.

This decision was made in view of the fact that the Home Riverside Coal mine there actually digs about four-fifths of its coal in the State of Missouri. The workings are reached by a shaft about 800 feet deep on the Kansas side, but the entry extends 5,000 feet, passing under the Missouri river before the face is encountered.

This ruling gives the Leavenworth operators an advance of 60 cents a ton in price.

### **Issues Attractive Book**

The Du Pont Company, of Wilmington, Del., has just issued a very attractive book, entitled "The Sport Alluring." It is artistically printed as well as illustrated, and will give many a very different idea of what one usually thinks the sport of trapshooting is. It contains over thirty illustrations that will interest any sporting man.



### PERSONALS

David Elliot Day, recently attached to the staff of M. L. Fuller in West Virginia, expects to sail for France in about a week on some special work.

J. M. Lovejoy, attached to the exploration parties in China in 1914-1915, but since that time being with the Producers Oil Co., has been commissioner a lieutenant.

W. R. Woodford, of Cleveland, Ohio, was a visitor in Washington early last month.

A. A. Augustus, of Cleveland, Ohio, spent several days at the capital early in the month, calling at the Mining Congress office during his stay.

F. Wallace White, of Bourne, Ore., and New York City, made the office of the Mining Congress his headquarters during his recent stay in Washington.

W. H. Huff, of Victor American Fuel Co., of Denver, Colo., who has been spending several weeks in the East, has returned to his home.

D. W. Brunton, of Denver, Colo., was in Washington early in October.

John H. Jones, president of the Bertha Coal Company, Pittsburgh, Pa., was in Washington during October on business with the Departments.

Dr. Henry Mace Payne spent several days in Washington last month, on business with the Coal Commission, and other governmental departments.

Hugh Shirkie, Morton L. Gould, Philadelphia, Pa.; J. C. Kolsen, of Indiana, attended the wage conference at Washington early in October.

George H. Cushing, editor of the Black Diamond, Chicago, Ill., spent several days at Washington, attending the wage conference.

Thomas B. Stearns has been appointed as food administrator for Colorado.

In the death of former State Senator Edward M. De La Vergne, on September 18, Colorado lost one of its most noted mining men. He was one of the earliest pioneers in the Cripple Creek District, it being asserted that he discovered the first ore in the place. He was a member of the American Mining Congress for many years.

Will L. Clark, formerly manager of the United Verde Copper Company, of Arizona, has been appointed Fuel Administrator for that State. Mr. Clark is a member of the

American Mining Congress, and has always taken an active interest in its work.

The Ninth Annual Convention of the Independent Oil Men's Association was held at the Hotel LaSalle, Chicago, October 9 to 12. Many interesting papers were presented, to a large and representative audience of oil men.

A dinner was given at Kansas City, Mo., on October 2, by the Western Petroleum Refiners' Association, in honor of the Petroleum Committee, Council of National Defense. H. G. James, president of the Association, was toastmaster. A. C. Bedford, chairman of the Petroleum Committee, was one of the principal speakers. There were 300 oil men present, representing the oil industry from Pasadena to New York, and Canada to Louisiana.

### ANTHRACITE OPERATORS

#### CONFER WITH DR. GARFIELD

Anthracite coal operators representing a major part of the country's hard coal output at a conference with Dr. H. A. Garfield, the United States Fuel Administrator, recently pledged their full support to the Government in its efforts to solve the coal problem.

It was brought out at the meeting that already this year the mines have produced 8,000,000 tons more of hard coal than had been mined at the same time last year. The hardest problem, all agreed, is that of distribution.

The anthracite operators named A. S. Learoyd as the representative of their industry to serve as an assistant to L. A. Snead, who is head of the Division of Fuel Supplies.

#### Labor Shortage Limits Output

Sixty-seven operators in the Connellsville and adjacent districts of Pennsylvania reported a production of 319,830 net tons of beehive coke for the week ended October 13. The percentage of production to capacity, as rated by the railroads, dropped from 72.7 in the week of October 6, to 68.2, a change caused by a more stringent shortage of coke cars. The sixty-seven operators shipped in addition 176,350 net tons of coal. The principal factor limiting output of both coal and coke remains shortage of mine labor.—Weekly Report of the United States Geological Survey.

#### Timely Book Appears

With the rapidly extending importance of the science of lubrication the reference book by John Rome Battle entitled, "Lubricating Engineer's Handbook," is particularly timely. The book contains data, tables and general information for the use of lubricating engineers, oil salesmen, operating engineers, mill and power plant superintendents and machinery designers.

# THE MINING CONGRESS JOURNAL

*Official Organ of the American Mining Congress*

## SHALL OUR COURTS BE UPHELD?

In line with the resolution adopted by the American Federation of Labor at its annual session at Buffalo, declaring that any injunction dealing with the relations of employer and employe, based upon the dictum that labor is property, "should be held as usurpation and disregarded, let the consequences be what they may," was the resolution condemning the prosecution of the Mooney case in San Francisco. Both of these resolutions, if the principle can be made effective, would result in the entire breaking down of the judicial system of the country.

In the San Francisco case a bomb was placed on a crowded street during a parade, resulting in the death of some and frightful injury to many other people. The courts of California, after a lengthy trial, found guilty some of the defendants who were charged with the crime. We are not prepared to discuss the justice of the verdict rendered, but we are of the opinion that if any injustice has been perpetrated by the verdict of the jury and the sentence of the court public sentiment in the state of California will be sufficient to secure pardon for any defendant who is improperly convicted. We believe it to be of very great importance that the judicial system of this country shall not be broken down at the behest of those who are charged with violation of the law which these courts undertake to execute.

THE MINING CONGRESS JOURNAL believes that organized labor discredits it-

self when it initiates recall proceedings to remove from office a district attorney who has performed his plain duty in the premises, viz.; to prosecute with all vigor those who have been indicted by the grand jury as having been guilty of a criminal offense. Mr. Charles M. Fickert, the district attorney of San Francisco county, is being persecuted in this way by those who pretend to represent organized labor.

A recent issue of the Mine Workers' Journal makes the following comment upon the verdict of the Supreme Court of the state of California in its refusal to grant a new trial in the Mooney case:

"Labor will not permit this crime to be consummated. Labor protests its horror of and indignation at this cold-blooded attempt to murder innocent people to satisfy the malice of proven criminals, suborners of perjury, and of every other crime denounced by God and man."

There can be no justification for this open threat that organized labor will break down the judicial system of the country. The fact is that a brutal crime was committed and that it was the sworn duty of the district attorney to prosecute those who are indicted by a grand jury charging guilt of this horrible act.

It will be recalled that a few years ago a similar protest went up from all parts of the country against the prosecution of the McNamara brothers for the dynamiting of the Los Angeles Times building, in which twenty-two innocent people lost their lives. An effort was made by the president of the American Federa-



tion of Labor to raise a defense fund of \$200,000. Later \$1,000 turned up in the hands of a prospective jurymen, who testified that it was handed him by the attorneys for the defense. The same protest was heard over the country at that time concerning the alleged injustice of the prosecution of the McNamara brothers, and it was then, as now, alleged that "unless some great influence is brought to bear, the state of California will prove its subservency to the money lords of the state, who believe they can crush the cause of the workers by convicting individuals among them." On July 27, 1911, the United Mine Workers' Journal published an article written by Mr. Samuel Gompers, from which we quote:

"With intrigue, falsehood, and utter disregard of all forms of law, applying to individual force, conniving with faithless officials, the two McNamaras were rushed in feverish haste to the scene of the alleged crime. The rights of these two men have been trampled upon wilfully, flagrantly, wantonly."

Notwithstanding these radical utterances and the fact that an enormous amount was raised for the defense, the McNamara brothers admitted their guilt of the crime with which they had been charged.

We are not discussing this case because of any settled conviction as to the guilt or innocence of the Mooneys in the San Francisco case. The important question is, shall the judicial system of the country be broken down? Shall the department of government to which we are required under the law to carry our disputes for legal determination be destroyed? Shall force of arms be substituted for the courts as a means of redress? No government can hope to stand which permits its subjects to fight out their own battles. The framers of the Constitution of the United States, with remarkable foresight, provided the means for the perpetuation of this Government by creating three departments, each independent of the other—the Executive, the Legislative, and the Judicial.

Organized labor would have the legislative department take over the processes of the judicial department, and, failing

in this, would undertake to resist the decrees of the courts and pull down the temple of justice upon their own heads. THE MINING CONGRESS JOURNAL believes that this course is subversive of the very best interests of organized labor and that it cannot be successful. Ninety-eight million people will not consent to the breaking down of that great bulwark of freedom, the greatest in history, the Constitution of the United States, in order that two million people may be permitted to do things which the law directs shall not be done. "No thief e'er felt the halter draw; with good opinion of the law."

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#### ANNUAL MEETING OF MEMBERS

The annual meeting of members of the American Mining Congress was one of unusual interest. In addition to the eight specific questions which were submitted to the members for consideration, conclusions upon which will be found in the report of this meeting on another page of this issue, it was also ordered that the weight of influence of the American Mining Congress should be given to the passage of the Webb bill, providing for business combinations in the conduct of foreign trade. The president was authorized to appoint a committee to take action with reference to the war excess profits tax provisions of the income tax bill, with a view to securing such construction of the intricate provisions of the law as will, as far as possible, make its burdens fall uniformly upon all kinds of business enterprises, and thus make it better serve the purpose of Congress, viz.: to obtain for the Government sufficient revenues to conduct in the most effective manner the great war in which this country is now engaged.

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#### THE ENDLESS CHAIN OF INCREASING PRICES

The great increase in business transactions necessitated by the conduct of the war has necessarily increased prices of all commodities and this necessity particularly applies to the matter of wages.

It is foolish to expect men to continue service at a wage scale just sufficient to support a family in ordinary times, when the cost of living has so advanced as to make it impossible for him at that wage to support his family. Increased wages, however, should always mean increased efficiency. Labor leaders have always insisted that the best service could not be expected from underpaid men. Increased wages, however, must lead to higher efficiency, or must add to the burden of consumers of the product of such labor. The fact that laboring men today, and the common people everywhere,—enjoy luxuries which were impossible to the royal families centuries ago is the result of increased efficiency in production. Whether through invention or more skillful labor the fact is that the common people are permitted through increased productive power to have more of the comforts and conveniences of life and more opportunity to improve themselves through education and recreation than ever before. Increased wages *per se* take from these luxuries and burden all consumers of the product. Increased efficiency, increased production per dollar of wages paid, brings this production nearer to all consumers.

The endless chain of increasing prices leaves the wage-earner little better off than when he started the movement which led to better wages, and a little later to increased costs of living, approximately absorbing his wage increase. The wage-earners of the country are receiving the highest wages in history and at the same time having great difficulty in meeting the increased living costs.

When will the endless chain of increased prices stop and move backward? It cannot go on forever. Shall the change come through business disaster, through panic, through a stoppage of employment, through hunger and want, or shall it come through intelligent cooperation between the various productive forces of the country?

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#### THE FRUITS OF COOPERATION

Three years ago it was decided to publish a monthly journal which would

carry to the members of the American Mining Congress full information concerning the activities of the organization, a résumé of the work being done by the Government bureau's serving the mining industry, and an analysis of legislation by the National Congress affecting mining.

It was thought that such a Journal would be of great value to the membership, and that it might eventually become a valuable asset in the support of the work if the proper cooperation was given.

The matter was presented to the leading machinery firms catering to the mining industry, with the result that a goodly number are now placing before our members each month a statement of how they can bring to mining that efficiency which the great national crisis demands.

Our members were asked to patronize these manufacturers in so far as was consistent with good business management.

When the JOURNAL was started, it was a financial burden to the organization. Through the cooperation of the membership and the manufacturers and dealers in mining machinery and supplies, it is now a direct contributor to the work of the organization. The members have given their cooperation at every turn. They are directly responsible for the present healthy financial condition of their publication. They have realized that cooperation is essential to the success of any enterprise, and the advertisers in the JOURNAL have been appreciative of this cooperation, and each year have renewed their patronage.

We shall, during the coming year, thoroughly cover every department at Washington that has to do with mining: The Bureau of Mines, The Geological Survey, The U. S. Supreme Court, The Federal Trade Commission, The Interstate Commerce Commission, The Fuel Administration, The Council of National Defense, and particularly the activities of Congress.

The growth of the JOURNAL has been noted on every hand. But we expect to grow materially during the next few months. Plans are under way for a very



much larger, better, more comprehensive JOURNAL.

Eventually we expect the JOURNAL to reach every mining man in the United States. We expect to make it the strongest agency in the country for creating a public sentiment that will be fair to the mining industry.

We want to make THE MINING CONGRESS JOURNAL the textbook of the mining Industry.

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## THE FUEL ADMINISTRATION

The serious responsibilities of the Fuel Administration are more keenly felt as the shortage of coal more clearly presents itself.

The nation's coal requirements during the year 1917 were approximately 25 per cent in excess of the ordinary production. Labor conditions and overburdened transportation interfered to some extent with production and distribution. The manifest shortage of coal made exorbitant prices possible for such coal as was not under contract. Operators who had been selling coal at a loss for years felt justified in recouping their losses when this opportunity not only presented itself, but was forced upon them by bids from consumers ready to pay any price in order to be insured a supply, in some instances offering bribes to the sales agents in order to secure coal at the exorbitant price. At this juncture the Peabody-Lane price was fixed at \$3 per ton—a price which would insure a profit to the small producers and would undoubtedly have increased production to such an extent that competition would have lowered the price to a proper basis. This was a sensible, practical solution of a difficult situation, and came as near to justice as any price-fixing program can hope to attain.

Unfortunate advisors led to the rejection of the Peabody-Lane proposal, and a price of \$2 per ton was fixed by the administration for the great central producing field, a price leaving a profit upon the production of probably 75 per cent of the total output, but below the cost of

production as to the remaining 25 per cent of productive capacity. As a justification, it was urged that profits should be taken out of patriotism—a well-sounding phrase, but misleading as to ordinary business operations. Fundamentally, all business is done for a profit and for no other reason. When operations are carried on for other reward than a profit the operation ceases to be a business enterprise. The production of coal by a company with a bonded indebtedness at less than the cost of production is impossible for any length of time. The result of the administration's order created another interfering factor to the production of coal necessary to meet the increased demand.

At this juncture the Fuel Administration came into existence, and Dr. Harry A. Garfield undertook to straighten out the difficulties, to right the inequalities, and to stimulate coal production to that point where the necessary demands of the public might be met. This difficult situation had already been created when Dr. Garfield undertook the duties of Fuel Administrator. Dr. Garfield necessarily delayed action in the selection of his organization sufficiently long to enable him to grasp the problems involved and select advisors who could be relied upon to bring to his assistance the best brains of the coal mining industry. Mr. Samuel A. Taylor, of Pittsburgh; Mr. Rembrandt Peale, of New York, and Mr. John P. White were selected to assist in carrying out the work of the Fuel Administration, selections which have met the entire approval and commendation of the coal mining industry and have brought to the Fuel Administration the most practical advice which could be secured.

The problems involved are still troublesome, and the most sincere cooperation from all sides has been tendered in the adjustment of the difficulties. While the present conditions are not assuring, it is earnestly hoped that conditions will be such that no fuel famine will result and that every need for industrial purposes and domestic use will be cared for.

## WHERE FUEL ECONOMY IS UNNECESSARY

In the January, 1917, MINING CONGRESS JOURNAL, reference was made to the legal proceedings then before the United States Federal Court brought by the Government against the Colorado Power Company to secure a cancellation of its rights of way, which were the basis of an investment of over twenty million dollars in the development of a water-power enterprise in Colorado.

This case is still pending. This company is still being prosecuted by the Federal Government on the ground that some of the original locators of the rights of way failed to observe in full the strict technical requirements of the law.

This Federal interference with the proper development of the water-power resources of the West has prevented the development of many other water-power enterprises which today would have gone far toward preventing the coal famine with which the nation is now threatened and would have made available for general public use coal which is being used for the development of power for manufacturing and mining purposes in that section.

Our attention is again called to this situation by a report from Denver that its "White Way" (Curtis Street) pronounced by Thomas A. Edison to be the most brilliant stretch of city street in the world, is not affected by the order of the Fuel Administration to economize in the use of coal by the elimination of unnecessary street lighting and illumination. The current for these lights is furnished by the Colorado Power Company's plant at Shoshone, Colorado, more than three hundred miles from Denver. The withdrawal of this suit and the adoption of a governmental policy which would justify water-power development in the West would go a long way toward making light the responsibilities of the United States Fuel Administration.

## THE FUTURE OF SILVER

No one question has called for more of oratory, more of bitter discussion and

controversy, and, without being the paramount political issue, has been a factor in more national political campaigns than that question involving the nation's money medium. When the great contest for the unlimited coinage of silver at a ratio of 16 to 1 was lost, there followed an immediate increase in the production of gold sufficient to stabilize the world's money. The discredited "green-backer" of past times would not find himself in such peculiar company were he now to compare his proposals with the present issuance of credit currency. We are going through revolutionary conditions—conditions in which we are turning away from the moorings of conservatism which have characterized the controlling features of the financial history of this country at least during recent times. The gold standard was practically established in the year 1872 after the currency system of the days of the civil war and the inflation of business which it brought about had receded to more normal conditions. The final act in the demonetization of silver came in 1893 and was followed by a business panic more general if not more serious than the panic of 1873. The increase in gold production of the world responding to the increased demand stabilized conditions during the marvelous commercial advances during the period from 1893 to the beginning of the European war, or perhaps more correctly speaking, to the enactment of the currency bill. Under this bill it was possible to very largely increase the circulating medium of the country. Since the beginning of the war the enormous expense attending its prosecution has made necessary not only a large increase in circulating medium but that our money should circulate rapidly in order that the enormous business transactions necessitated by the war might be consummated.

With a gold basis of approximately \$3,500,000,000 we are spending an amount in excess of \$20,000,000,000 and this seems only to mark the beginning of the expenditures which will be necessary before the great determined purpose of the American people shall be accomplished. Not only do the conditions



within the United States require the use of a largely increased currency, but these same conditions are more intense in practically every European country engaged in the war. During the early stages of the war the gold of the world came to this country in payment for the military supplies which were exported in such measure as to almost double our basic gold supply. This was not new gold but gold taken from the circulation of other countries which in turn are conducting their business by the use of more of asset currency. Much in the way of inflated currency will pass during the war times when the prime necessity of the hour calls for unusual personal sacrifice. When the war has been concluded the European countries will of necessity be required to stabilize their currency system by the use of an amount of metallic money sufficient to give confidence to the public that final redemption is possible. From where can this metallic supply come except from the countries which now possess it? When the demand is made by which gold or some metallic substitute therefor shall be a necessity as a basis of money in European countries, they must either draw from the gold supply of the United States which will not then be proportionately more than the amount which in times past has been considered essential to a stable currency system or upon the world's silver supply. It seems probable, if not inevitable, that these countries will be forced to accept silver and upon some basis of value greatly in excess of the price which has prevailed since the demonetization of silver.

The United States produces practically two-fifths of the world's silver supply and the price which the nation shall receive for such of this silver as goes into foreign exchange is a matter of vital interest to the country at large and particularly to its silver producers. It seems probable that the necessity for the use of silver will be so great during the next few years as to absorb the available silver supply without fully meeting the need for monetary purposes. Is the United States to permit its silver supply to be sold for

twenty-five to fifty per cent less than its value as fixed by the demand for its use as a money medium of our sister countries? We believe the time has come when the United States should interest itself to see that a product which is absolutely essential to the other nations should not be permitted to pass to those nations except at a price which approximately represents its value for the use to which it is to be applied.

#### PRIORITY ORDERS

With a demand in excess of the supply, prices are bound to continually advance in accordance with the inevitable law of supply and demand.

Temporary governmental restrictions may for a time interfere with the action of this law, but its final operation is as inevitable as the law of gravity. An interference with the law of gravity takes place by the elevation of bricks and mortar from their natural resting place to the top of a high building. But by a scientific process which takes advantage of that same law these materials are held in place and a complete building results. Every interference with the law of supply and demand must be scientifically adapted to a definite purpose, or the structure created thereby will not only fall to the earth, but will crush those who look to it for protection. Destructive tornadoes result when the atmospheric pressure is relieved at one point and increased at another. Ill-advised priority orders have the same effect. The diversion of a shipment of wheat from one section by governmental order, without regard to the markets which have looked to that section for supply, is certain to leave those markets in want, unless, perhaps, that want is met by drawing supplies from some other neighbor, which in turn must suffer for lack of supply.

While the present situation makes necessary Government control of many business situations, it is urged that the public interest will be served by the least possible interference with those agencies through which our business has been developed.

### THE LOYALTY OF LABOR

It is greatly to be regretted that the recent meeting of the American Federation of Labor, held at Buffalo, New York, should have gone on record as approving an open defiance of the law in case its execution shall seem to violate the principle that "labor is not a commodity."

Labor's pledge of loyalty to the Government would have received most generous acclaim were it not for this un-American, treasonable declaration.

If the great effort which this country is now making for free government in the world means that a few people shall have the right to dictate to the many, then much of that for which we now strive will be in vain. Without discussing the question of whether labor is or is not a commodity no man and no set of men less than a majority of the whole people have a right to have laws made at its special dictation, and no minority has the right to say that it will openly and flagrantly violate any law which has been enacted by the representatives chosen by the American people. The minority rule is not working well in Russia; minority rule has not worked well in Mexico. The intelligence of the American people will see to it that there is no control in this democratic government except the control of the majority.

### THE BACHE-DENMAN CASE

Much interest will be felt by all interested in the wage question in the decision rendered in the suit of the Bache-Denman Syndicate against the United Mine Workers and others in the Federal court at Fort Smith, Arkansas, November 22.

The suit was brought by the plaintiff to recover \$2,250,000 because of the destruction of the plaintiff's mining plant at their Prairie Creek mine, in Sebastian county, Arkansas, July 1, 1914. The destruction of this property followed the attempt of the mine operators to work their mines with non-union men after a strike had been declared by the union. Several lives were lost in the shooting which occurred during the disturbances, which continued until two troops of the

United States cavalry were summoned from Fort Sheridan to uphold the orders of the United States marshal who had been placed in charge of the property. An appeal will undoubtedly be taken from the decision of the court. The jury in the Federal court returned a verdict for the plaintiff in the sum of \$200,000, the plaintiff being entitled to three times this amount under the Sherman act. The questions involved in this suit are very similar to the principles involved in the Danbury hatter's case, except that in the latter the damage was the result of a boycott, while in the Bache-Denman case the damage is claimed because of the destruction of property.

### A SILVER CONFERENCE

The recent violent fluctuations in the price of silver have again brought to the country and particularly to the silver producers of the west a realization of the probable importance which silver is likely to play in the monetary affairs of the world in the future. This interest is not based upon any theory that bi-metalism will again be established upon any given ratio, but for the reason that a largely increased metallic basis must be secured by European countries in order that in the after-war period there may be some substantial basis for the credit money, the use of which is required by present conditions.

A jubilee held in Nevada some little time ago when silver went to a price above \$1 per ounce in the markets, quickly followed by a reaction to 85 cents, led to the calling of a conference by Governor Emmet D. Boyle, of Nevada, and the sending of a delegation to Washington to confer with the Treasury officials concerning the future of silver. This delegation consisted of Governor Boyle, Whitman Symmes and S. H. Brady, as an official Nevada delegation, with whom unofficially was associated Mr. W. C. Ralston now of New York, formerly in California and largely interested in the mines of Nevada. Accompanying this delegation to the conference with the Treasury officials were Senators



Newlands and Pittman, of Nevada, Smoot, of Utah, Shafroth, of Colorado, and Ashurst of Arizona; Mr. Strauss, of J. W. Seligman & Co., of New York, and others.

While no definite result was accomplished by the conference it is understood that the western delegates feel great encouragement in the hope that the future purchases of silver by the Government may be made on the basis of \$1 per ounce, a price only slightly in excess of the present cost of production. It was demonstrated at this conference by the data compiled by the bullion tax commissioners of the State of Nevada, whose record of production is as nearly accurate as it is possible to attain, that the present increased costs of operation make the cost of producing silver in the best Nevada silver mines 26 cents per ounce more than during the pre-war period.

At this time there seems to be a considerable demand upon the Treasury for silver for exportation to other countries in view of the fact that a positive embargo has been placed upon the export of gold. The present production is thought to be entirely insufficient to satisfy the present demand, to meet which it is proposed to retire the silver certificates, thus releasing the bullion which now secures them, approximately \$150,000,000, and to issue in lieu thereof Federal Reserve Notes to be in turn secured by silver hereafter to be purchased.

A general conference is now in progress at Salt Lake City under the auspices of the Utah Chapter of the American Mining Congress and it is anticipated that a further discussion of this subject and also the use of the base metals, lead and zinc, will justify a greatly increased activity in the development and operation of western mines.

#### SAFETY FIRST

The "Safety First" idea made general in its application by the agitation which led to the creation of the Bureau of Mines has accomplished much for which the nation is grateful. Incidentally, it is probably responsible for the creation of

those departments of city government, not now unusual, under the title Departments of Safety. Usually these departments are created for the prevention of street accidents. It is somewhat amusing to note that the manager of safety in one of the western cities will be expected, if a city ordinance now under consideration shall be passed, to provide safety for investors in oil stocks. It is planned that no one shall be permitted to sell stocks in oil development companies except that he shall have a permit from the manager of safety, who must be first convinced by satisfactory evidence that the company is organized in good faith and is engaged in legitimate oil development. The purpose of this ordinance is commendable, and the result of its operation will be watched with interest.

#### CONCERNING PRICES

Why is it that the increase in price of staples necessities always calls for unmeasured criticism, while the price on the non-essentials of life, which are purchased in very much greater amount, may reach the sky limit without protest? A 100 per cent increase in the cost of many non-essentials is accepted without question, while a 25 per cent increase in the price of coal is regarded as an outrage, and the coal operator is immediately consigned to dire punishment, even though the greater part of the increased price is paid to the railroad which transports and the dealer who delivers the coal. For instance, why is it that tanned muskrat skins are sold as Hudson seal at practically the same prices as a few years ago were charged for the real Alaskan seal without protest by the purchaser? The situation of the coal operator is most fittingly described in the old adage, "Give a dog a bad name and hang him."

#### WAR EXCESS PROFITS TAX

General protest by the mining industry is being made because of the provisions of the war excess profits tax provisions of the war revenue bill. The intent of this bill was to provide a division with the Government of the profit made dur-

ing the war period in excess of the profits made during the pre-war period. In order to arrive at the amount of profits during each period, it was necessary to determine the amount of invested capital upon which a certain percentage of profit was to be allowed during the pre-war period, which was to be deducted from the profits gained during the war period, the remainder to be taxed. This tax was fixed at 20 per cent of the amount above the deduction and not in excess of 15 per cent of the invested capital, this tax being graded up to 60 per cent of the amount of the net income in excess of 33 per cent of such capital, first deducting the profits during the pre-war period.

The pre-war profits were not to exceed .9 per cent, but in all cases to be as much as 7 per cent of the invested capital. The special burden which this war tax imposes upon the mining industry grows from the fact that the average metal producing mine must first pay back the cost of the original investment before there is a certainty of any profit. This because of the fact that in most cases the actual life of a mine cannot be predicted, the value of the ore bodies can only be guessed at, and while enormous profits may be made in some mines, other mines of equal promise become worthless through the exhaustion of the ore body either in its volume or in the richness of its ore. Even in those cases where the value of the ore body is positively known another element enters, viz.: that the net value of the ore taken from a mine is not profit, because it is the sale of a part of the mine itself. The mine with a life of twenty years, each year sells one-twentieth of the original investment, and at the end of the twenty years the entire property has been disposed of. To say that a farmer owning a farm of 100 acres who each year sold five acres of his ground was making a profit of the amount received for this land would be equivalent to saying that the value of the ore taken from a mine with a life of twenty years should go into the profit account. In each of these instances at the end of twenty years the entire property has been disposed of. Whatever

received above the cost of the original property and the expense of operation is profit. The return to the holder of the value of the original property is a sale of his property, and in no sense a profit, and should not be subject to an excess profits tax. Realizing the difficulty in the administration of this law, the Secretary of the Treasury decided to appoint an advisory committee to assist in framing regulations. A general effort was made to induce the appointment of someone as a member of this committee who understood the fundamental principles involved in a wasting industry like mining, in which all production means an exhaustion of the original investment.

As a part of this movement, the following letter was sent to the Secretary of the Treasury:

Washington, D. C., Nov. 5, 1917.  
HON. WILLIAM G. MCADOO,  
Secretary of the Treasury,  
Washington, D. C.  
MY DEAR SIR:

Will you permit me to urge the selection of a representative of the mining industry upon the Advisory Committee proposed to frame regulations under the War Revenue Act?

The mining business deals with an exhaustible product, which being exhausted, can never be replaced. Its income cannot in fairness be calculated upon the same basis as the income of other lines of business which reproduce themselves.

We feel that there should be at least one member of your Advisory Board thoroughly familiar with the fact that the proceeds of mining operations do not represent values created by the business, but largely come from a depletion or waste of the estate and the capital invested therein.

The American Mining Congress urges no particular appointment, but only that you will give consideration to this peculiar situation in the selection of your Advisory Committee.

Very respectfully,

THE AMERICAN MINING CONGRESS,  
By J. F. CALLBREATH,  
Secretary.

In response the following letter:

TREASURY DEPARTMENT  
WASHINGTON

November 15, 1917.

HON. J. F. CALLBREATH, Secretary,  
The American Mining Congress,  
Washington, D. C.

MY DEAR MR. CALLBREATH:

By reference from the Secretary I have your letter of the 6th asking that a representative



of the mining industry be selected as one of the Excess Profits Advisers.

The Secretary would have me advise you that these advisors have been finally agreed upon, and it is regretted that favorable consideration could not be given to all representatives of various interests whose names have been presented as willing to serve in the capacity indicated. The numerous responses which have been received from all over the country are reassuring and encouraging as an evidence of an earnest desire to cooperate in the administration of the War Revenue Act.

I am enclosing herewith a copy of the announcement just released to the press in regard to this matter.

Sincerely yours,

(Signed) DANIEL ROPER,  
*Commissioner.*

With this letter came the announcement of the membership of the "Excess Profits Advisers," as follows:

Representative Cordell Hull, a member of the House Committee on Ways and Means.

T. S. Adams, economist, of Yale University.

Wallace D. Simmons, president, Simmons Hardware Co., St. Louis and Philadelphia.

J. E. Sterrett, of Price, Waterhouse & Company, accountants, New York City.

S. R. Bertron, of Bertron, Griscom & Co., bankers, New York City.

E. T. Meredith, editor, *Successful Farming*, Des Moines, Iowa.

T. W. McCullough, editor, *Omaha Bee*, Omaha, Neb.

Stewart W. Cramer, of the National Council of Cotton Manufacturers, Charlotte, N. C.

Henry Walters, chairman of the Board, Atlantic Coast Line and Louisville & Nashville Railways.

This committee immediately entered upon its duties, and provided opportunity for various hearings at which different objections to the technical requirements of the law were presented. The following brief was presented in behalf of the Mining Congress by a committee consisting of Archibald Douglas and Paul Armitage, of New York, and the Secretary:

MEMORANDUM WITH RESPECT TO THE WAR REVENUE ACT ON BEHALF OF THE AMERICAN MINING CONGRESS

*Introductory Statement*

The Commissioner of Internal Revenue has asked the various industries of the country to submit to the Bureau of Internal Revenue any suggestions they may desire to offer "with respect to the interpretation, application or administration of the Excess Profits Provisions of the new law." After giving careful consideration to the above invitation, the

American Mining Congress, representing the mining industry, in its many forms, and widely scattered properties, including a number of relatively small properties in the West and Southwest, feels that it can render the greatest service to the Government by pointing out a few respects in which the present law will work injustice and inequality of taxation, taxing the conservative companies with small stock issues at a relatively much larger amount than the ones with inflated capital, and then suggesting an interpretation of the Act which will avoid these injustices and inequalities, with a few simple changes in the Act with a view to correcting them. For it should be emphasized that the mining industry does not wish to avoid its just share of taxation. It expects to be taxed, and that heavily, but simply desires just and uniform taxation.

As you are aware, the products of the mining industry are next in volume to those of agriculture. We believe also that they are of practically equal importance toward the winning of the war.

You are also aware that a mine or an oil well is a very different property from any other. For the owners of mines and wells must seek, find and extract their product from beneath the earth, and finding a commercially productive mine or well is so rare that hundreds fail where one succeeds. Again, this process of seeking and finding ore in a mine generally requires an immense expenditure for development work, which expenditure is not carried to capital account. For it should be emphasized that in the case of the great majority of smaller enterprises each mine is owned by a separate company, which cannot add to the purchase price of its properties expenditures for development work and losses sustained in proving other properties to be valueless, an advantage possessed by the large corporations. The investment needed to extract and reduce ore varies greatly with its mineral contents. When the ore is mined out the capital is absolutely gone. All these facts are taken into account by the public, which, recognizing the hazards of these businesses, requires an actual income of from 10 per cent to 15 per cent to establish a market value of par; *i. e.*, fully double the ordinary interest rates.

Now the War Revenue Act takes no account of the peculiar nature of mines and wells. It defines their "invested capital" just as that of other corporations, giving them no benefit whatever from the discovery of new ore bodies, and allows them the same income return thereon. The result either as between different mines, or as between mines and other corporations, will be taxation which is neither equal nor uniform. So far as mines are concerned, the definition of "invested capital" in Section 207 of the Act sets a premium on all of the discreditable devices of the past twenty years intended to work up and inflate book values as a basis for the issue for watered stocks, while legitimate mining companies of

many years standing which have charged off their expenditures against operation on the theory that a mine is a wasting property, will be penalized for having done so.

Very briefly, the following is the scheme of this War Excess Profits Tax, which, by the way, is not an "excess profits" tax at all, as many companies will pay it who have smaller incomes than in the pre-war period:

The net income of the taxpayer is determined according to the provisions of the Income Tax Law, and from this income, before assessing this Excess Profits Tax, there is deducted a certain per cent (between 7 per cent and 9 per cent) of the "invested capital." This "invested capital" is a technical term, to be determined strictly in accordance with Section 207 of the Act, and subject to its peculiar restrictions and limitations. So that the main factor which determines the amount of the deduction, and hence determines the amount which one is to pay by way of this "War Excess Profits Tax" is this artificial "invested capital." The larger the invested capital, the larger is the deduction from income and hence the smaller the excess on which the excess profits taxes are computed by using the percentages set forth in Section 201 of the Act.

It is therefore apparent that any technical limitation which prevents a company fixing as its invested capital the real value of its property, works an injustice to that company; and that any technical provision which enables one company to fix its invested capital, and hence its deduction, at a larger amount than another company with exactly the same property and exactly the same income, works a great injustice to the latter.

We contend that Section 207, unless it be construed as suggested in III below, will be particularly objectionable from either one of these standpoints, and that it will be particularly objectionable from the standpoint of mining companies of small capitalization. We therefore make three suggestions under the following heads. The first two indicate two simple amendments of the Act, which we submit will lead to uniformity and equality of taxation. If, however, it is not now possible or advisable to amend the Act, the third heading indicates a construction of the Act which will serve the same purpose and accomplish the same object.

#### I

*The words "but in no case to exceed the par value of the original stock or shares specifically issued therefor" should be stricken out of Section 207 (a) Subdivision 2.*

We mention this provision of the law first because we believe that if it remains in the Act, it will be the greatest and most objectionable factor in producing great inequality and injustice, and that it will bring about exactly the opposite result from that intended by the framers of the law. Presumably their object was to prevent companies with inflated capital and watered stock, overcapitalized for stock jobbing purposes, from taking advantage

of their inflated capital to reduce their taxes. Their object was not to tax the conservative company a relatively larger amount than the one of reckless capitalization with the same assets and income, but to secure justice and uniformity in taxation. How does this work out in practice? A few examples will show both the absurdities and gross inequalities which will result from retaining this provision of the Act.

For instance, suppose a company on December 31, 1913, issues only \$100,000 capital stock specifically for assets worth \$1,000,000, setting up no surplus whatever. Under Section 207 its "invested capital" is only \$100,000; whereas another company with the same assets and the same capital stock, organized on January 2, 1914, just two days later, will be allowed as "invested capital" \$1,000,000. So that the latter company will be entitled to a deduction of \$93,000, as against \$12,000 for the first company, unfortunately acquiring its assets in the year 1913. What possible reason can be suggested for such an absurd distinction? This example will illustrate the inequality of taxation growing out of the date of acquisition of assets.

*First.* Take the provision that invested capital as to property acquired prior to 1914 shall not exceed the par value of the stock issued therefor. Suppose two companies are incorporated in the year 1910 each with assets worth \$1,000,000. One issues only \$100,000 capital stock for its property, while the other issues \$10,000,000 capital stock for its property, which is then of equal value with that of the first company. And suppose that the property of each one of these companies on January 1, 1914, is worth \$10,000,000, and suppose the income of each one of these companies for the year 1917 is \$500,000. According to the strict provisions of Section 207 (a) subdivision (2) the first company will probably be allowed only \$100,000 as its capital invested, while the second will probably be allowed \$10,000,000. If the percentage of deduction which they are allowed is 9 per cent, the first company will be allowed to deduct from its \$500,000 only 9 per cent of \$100,000 in addition to the \$3,000 fixed deduction, or \$12,000 in all; while the second company will be allowed to deduct \$903,000. In other words, the first company will have to pay an Excess Profits Tax on \$488,000 of its income, while the second will have to pay no Excess Profits Tax whatever.

These same inequalities are apparent when this provision of the Act is applied to other industries. For there are thousands of small companies throughout the country, capitalized at small amounts either from conservatism, because capital stock is simply a convenient form for defining aliquot interests in a particular property or business, or for other reasons. All of these will be most unjustly discriminated against by this limitation. The injustice is particularly great to conservative mining companies, however, for it is a matter of common knowledge that many mining companies are largely over-capitalized, capitalized



largely on their trust in the future. *We simply ask that these companies should be compelled to pay exactly the same tax as the conservative ones owning properties of the same value and receiving the same income.*

It is well understood today that the par value of capital stock is in no sense a criterion of real value. In fact, it is now the opinion of the best and most conservative business men that many of the evils of inflation, stock watering, and stock jobbing, will be eliminated by authorizing, as is now the case in some States, stock without any par value, a share of stock simply indicating what it really is; viz., an aliquot part in a property. In fact, the question may well be raised whether this provision which makes your excess profits tax depend on the par value of your capital stock is not so artificial and unjust as to be unconstitutional.

We therefore respectfully submit that neither the Government nor any individual nor corporation will be injured by the elimination of this provision, while on the other hand uniformity of taxation will be promoted, and the grossest injustice and inequality will be eliminated thereby.

## II

*The words "at the time of such payment" should be omitted from Section 207 (a) Sub. 2 and (b) Sub. 2.*

The attempt to limit "invested capital" to the value of property at the time of its acquisition is peculiarly unjust in the case of the smaller mining company, which as indicated above, in most cases is organized to own a single mine after its promoters have spent large sums on prospecting and developing losing properties. Its owners have, in many instances, acquired a large number of worthless properties before they have developed a successful one, and have expended large sums to make that one successful. In other words, this provision clearly discriminates against the mining company which only after the expenditure of large amounts of money and time finally succeeds in putting itself on a paying basis, which increases the values of its properties not by sitting and watching them grow, but by the expenditure of large amounts of money and labor and energy. As it has by these means increased the value of its properties, it should in all justice and fairness be permitted to use these values in determining its "invested capital."

Besides, it is not a scientific basis of valuation nor of determining invested capital, and probably will result as often in the way of reducing taxes as in increasing them. For instance, suppose a manufacturing plant worth \$1,000,000 to be acquired for \$1,000,000 stock in 1910, that it was worth \$1,000,000 on January 1, 1914, but that by reason of wear and tear, falling off in business or other causes, it is today worth only \$250,000. Under Section 207 the "invested capital" of this company is today \$1,000,000, whereas its real assets are worth \$250,000. The same situation might

well result from the purchase of a highly developed and successful mine prior to 1914, which was still paying well on January 1, 1914, but which has by this time so far exhausted its ore reserves as to be practically valueless at the present time.

Again, this provision adds an additional burden to the taxpayer and to the Government. It is difficult enough to determine the value of a mining property as of today, but this provision makes it necessary today to attempt in some way to determine the value of all sorts of property as of four years ago, a task which will be productive of endless disputes and probably much litigation.

Finally, the Government itself, in its Capital Stock Tax Law, yearly makes a rough attempt to value the assets of a corporation by fixing the value of its capital stock. Surely it is not unreasonable to ask that the same principle be adopted when there is an effort to fix the ratio of income to invested capital or the amount of invested capital to be used in determining the amount to be deducted from income before applying the Excess Profits Tax. This method will have the merit of consistency, will be much more simple and workable than the one now in the law, and will eliminate artificial inequalities which are so inherent in the present system.

## III

*The words "earned surplus" in Section 297, Sub. 3, of the Act, are reasonably intended and should be construed to include the values of ores and mineral deposits discovered, located and developed in any mine since the organization of the company, and should be considered as "invested capital" within the Act, to the extent that such developments add to the net values of the company in excess of its capital stock. Such values are "earned" and constitute surplus.*

The theory of the Act divides the valuation of the property into:

(a) The cash value of property at time of payment, if subsequent to January 1, 1914, and (b) and as of January 1, 1914, if tangible property was paid in prior thereto.

In the first case "(a)" we have a valuation based on the time of payment, which may be at any time within three years; and in the case "(b)" the payment date is at least four years prior to the time of application of the Act, (i. e., January 1, 1918).

In neither case, under this Act, unless a broad construction is given to the words "Earned Surplus" could any allowance be made for the increased values or assets of a company, *earned*, as the result of the scientific development, since January 1, 1914; and the result, almost without exception, would be highly discriminatory, and, in many other cases might become confiscatory.

It should be borne in mind that the life of all mineral properties is limited, and in most, great fluctuation and differences in the value of the ore and mineral deposits occur over limited periods, due to exhaustion on the one

hand of its ore by the ordinary process of mining, and the discovery of ore due to the expenditure of money and time in development work, on the other. For this reason the *values* of the mining properties are subject to constant change.

This is not generally so, however, in the case of manufacturing and mercantile corporations. There a domestic capital is invested for the production of, or sale of, articles of commerce, having a stable and more or less fixed value and demand, with a definite *source of supply* for its raw material or stock.

A mining corporation, therefore, differs from a manufacturing or mercantile business in that its *source of supply* (i. e., its ores) is a question of uncertainty; and the values of its assets dependent on the discovery of ore or mineral deposits *through the expenditures of moneys and work*, are subject to increase or decrease within limited periods of time.

*The discovery of ore or mineral is not, however, in any sense to be considered as an unearned increment.* It is idle here to point out that the term "Unearned Increment," as generally applied to real estate is an added value given to property as a result of the increase in values or the change in surrounding properties due either to the industries of other owners or the natural expanse of population, ease of transportation, etc., and not caused by labor or development by the property owner benefitted.

It is submitted, on the other hand, that mining values discovered and so developed as to be readily valued within reasonable limits, are values *earned* and *produced* as the direct results of (a) mining and engineering skill, (b) the expenditures of money and time in opening up the mine, and (c) the employment of labor. The fact that there is a hazard or chance incident to every such discovery does not make the discovery, when successful, any the less *earned* as the reward of and as the result of industry. There would be no discovery if there was no work done. Shafts have to be sunk, machinery employed, drifts run, men are employed in blasting and trucking week after week, engineers and geologists are busy, capital and industry used, and if, after months and often years of such effort, ore is encountered, the value of the ore must be considered as "earned."

It would, therefore, follow that, if through the discovery of mineral in place, such a substantial increase in the values of the company's property would occur that there would be a *surplus of value* over "the actual cash value of tangible property paid in other than cash, at the time of such payment" (Section 207), that such value should be considered, first, as "*earned*" for the reasons set forth above, and second, as "surplus" or increase over the original capital invested, and should become within the definition of Section 207 of the Act "*Invested Capital*" and "*Earned Surplus*."

*Let us consider the effect of any other construction:*

Assume a mining company, owning claims,

is incorporated in December, 1913, with a capital of \$100,000, represented by cash invested. In 1915, as the result of the use of this capital in employment of engineering skill of labor, and the purchase of materials, extensive ore bodies are encountered and blocked out, so that from the sale of ore, the company has an income of \$100,000 per year, and its developed ore in place, when measured and marked out, has a reasonable net value after developing costs, of say \$500,000. Can it then be argued that there has not been a *surplus* created here? The ore can be valued. It is valued under the Act of 1916, for depletion purposes; without question it has been "*earned*" (Sec. 12, Sub. 3, Act Sept. 8, 1916).

We submit in such assumed case, that \$400,000 should be carried to invested capital account. If not, a heavy penalty would be placed under the Act on conservative investment, and the "wild cat" who originally, under similar circumstances, places his capital at \$1,000,000, or ten times as much, would be fairly free from tax under the Act.

Cases similar to those cited above are the usual cases to a greater or less extent of successful mining companies.

Unless ore developed and in place can by a broad construction of the act be considered as invested capital under the definition of earned surplus, mining operations will be at a disadvantage in filing their assets with mercantile or manufacturing corporations, for the reason that generally speaking all mercantile and manufacturing corporations under this act can fix their invested capital by adding the sum of three elements as follows:

1. Cash paid in.
2. Tangible property turned over for the stock of the company.
3. The earned surplus of the mercantile or manufacturing corporation.

Earned surplus in a mercantile or manufacturing corporation can be and will be originally in one form or another made a part of its assets. It will include under this act the goods manufactured, stock in hand and other assets added in one way or another to the business and will be shown in the annual revaluation or stock-taking of such business and brought forward on the profit and loss sheet. This has been the custom of manufacturing and mercantile corporations for many years, this additional value having been added as an inventory value.

It is submitted that in making a report under the excess profits tax that the mercantile corporation will have no difficulty whatsoever under the act in carrying such increased value as earned surplus.

This cannot be so, however, with a mining corporation unless a liberal construction is given by this committee to the words "earned surplus," and unless such a liberal construction is given by this committee, a mining corporation will be obliged to make up the sum of its invested capital from one of two



elements, i. e., (1) cash paid in, (2) tangible property turned over for stock, and therefore be at a distinct disadvantage as against other corporations operating in the country.

Unless the mining corporation can add the third element of earned surplus, it is clearly discriminated against in making up its capital invested.

It is therefore submitted, as outlined above, that for this additional reason a broad construction should be given to the words "earned surplus" so that the burden of the excess profits tax shall be uniform over all kinds of corporations whether they be mining, mercantile or manufacturing.

Unless a broad construction is given to the words "earned surplus" so as to include ore discoveries, as above, many mining companies will pay from 50 to 60 per cent as a war tax, while companies in other lines will pay but 25 to 40 per cent on the same values. All the mining companies ask is a plan to produce uniformity and equality in the tax as bearing on all enterprises, of all kinds, throughout the country.

If, however, the value of this ore, so discovered and developed as the result of underground work, be considered "invested capital" under the heading "earned surplus" a more uniform rate of taxation would be placed on the various mining industries, and the basis of taxation would become scientifically fixed at the present value of the mining property and not on a value fixed some time in the past nor based upon a "value created" by the whim of the original incorporator of the company.

For the reasons given, it is submitted that ore so found and valued be considered as "earned surplus" and "invested capital."

*If the construction of the law above suggested be adopted, then it will not be necessary to amend the law as indicated in I and II above. It is therefore highly desirable for all interests that such a construction be adopted.*

Dated November 27, 1917.

Respectfully submitted,  
THE AMERICAN MINING CONGRESS,  
By J. F. CALLBREATH,  
Secretary.

cause of the fact that the great majority of the miners of the country had agreed to it as a suitable and useful way of protecting themselves against the extreme, radical and disorderly element.

"Mine workers are, for the most part, good American citizens. They resent as much as any other class an unwarranted interruption of work, especially in the present national crisis. So long as the great majority of the United Mine Workers of America favor the automatic penalty clause, it is entirely proper and, indeed, in accordance with the principle of the majority rule, that it should be made a condition of an advance in price of coal.

"The people of the United States are willing to pay a reasonable amount more for coal at the present time if they can thereby be sure of the supply. They realize that the demands of the Government because of the war are enormously increased, and believe that it is only fair to ask operators and miners to agree to keep production at a high point as a condition of increase in price of wages. Under the circumstances, I can have but one object in view, namely, to do everything in my power to keep the mines in operation and to increase production. This I conceive to be also the bounden duty of every loyal American engaged in the mining of coal. Of course, the automatic penalty clause must not be made the occasion for oppression, either on the side of the operators or the men.

"If honest differences arise, they must be thrashed out by the representatives without disturbing the operation of the mines. All the machinery provided for in agreements between operators and miners must be used and every effort exhausted to reach an agreement. So among the nonunion mines operators and mine workers must use every means possible to agree.

"If in either case an agreement is not reached, the facts must be laid before me for decision. I will act promptly, and I hope it is unnecessary to say, with justice to the contention of each party."

## NEED FOR PENALTY CLAUSE POINTED OUT BY DR. GARFIELD

On official confirmation that Alex. Howatt, a leader of the United Mine Workers of America, had ordered the striking miners in the Kansas district back to work pending the Kansas City convention, called for November 12, at which the automatic penalty clause was accepted, the following statement made by Dr. Harry Garfield was given out:

"The spirit of the understanding between the operators and mine workers on the one hand and the Fuel Administration on the other is that mining operations shall be continued without interruption during the period of the war. I recommended the automatic penalty clause in the President's order be-

## Must Submit Cost Sheets

Producers of coke seeking to alter the coke prices fixed by the United States Fuel Administration must establish that their cost of production justifies the changes asked for. Fuel Administrator Harry A. Garfield recently issued the following regulation:

"If a change in the price of coke is desired, the applicant should first procure the Federal Trade Commission's uniform cost sheet. These should be filled out for the calendar year of 1916 as a whole and for 1917, month by month, to the date of application. The cost sheets may be secured from either the Federal Trade Commission or the Fuel Administration."

### THE AMERICAN MINING CONGRESS

"To put before the country at large the needs of the mining industry and to obtain recognition is the largest undertaking of the American Mining Congress."

So Carl Scholz, president of the Congress in 1914, 1915 and 1916, phrased the mission of the organization in a notable address delivered at the Second Pan-American Congress, held in Washington last year.

As he talked, leaders of the mining industry from all countries of the Americas, as well as from the Old World, listened intently to the portrayal of the work of this national organization, which in the past years has done so much for the development of the mining industry in this country, and were enthusiastic as to its future effort.

Now, after twenty years of life, the American Mining Congress, vigorous in the attainment of its manhood, is steadily moving forward to newer and greater work for the advancement of the nation's greatest industry.

The tiny infant organization—the International Mining Congress, as it was known at the beginning—was made up of mining men, owners, prospectors and workers from the states lying west of the Missouri River and in Mexico. The times were troublous ones. The agitation for the free and unlimited coinage of silver was at its height.

The great need of cooperation in matters pertaining to the mining industry was evident, and on July 7, 1897, the delegates assembled in Denver and elected former Gov. Alva Adams as temporary chairman and president.

Promptly, it is recorded, the inevitable free-coinage resolution came up for debate, and following this discussion the Congress started on its mission to do something tangible for



THE LATE DR. E. R. BUCKLEY  
President 1910

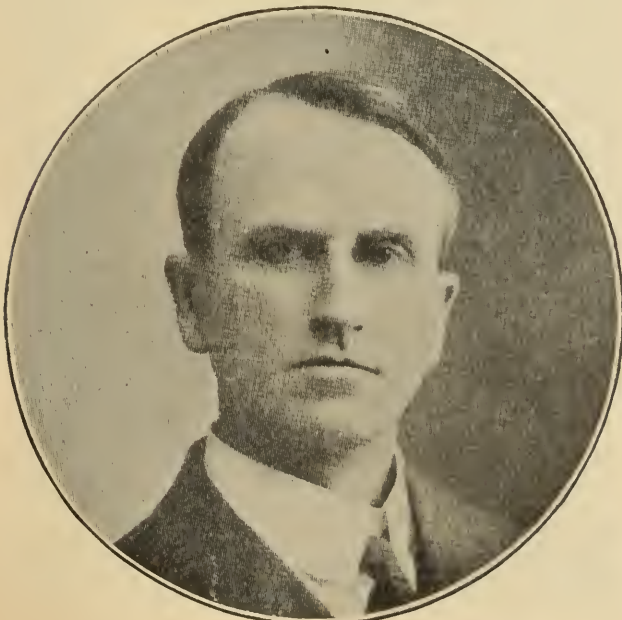
the mining industry, the first move being to start the agitation for the establishment of a Federal department of mines and mining. Resolutions were adopted, but there was no subsequent concert of effort.

A year later the second meeting of the Congress was held in Salt Lake City, with former Gov. L. Bradford Prince, of New Mexico, serving as the presiding officer, he having been elected to the presidency of the Congress at the Denver meeting.

The next meeting place of the Congress was in Milwaukee, in 1900, when Col. B. F. Montgomery, former lieutenant governor of Colorado, was in the chair. These early congresses, as well as the one held at Boise, Idaho, in 1901, the fifth convention at Butte, Mont., and the sixth one at Deadwood and Lead, S. Dak., comprised the formative epoch of the organization, during which leading men of the industry participated in the effort in hand.

The incorporation of the American Mining Congress was effected in 1903, with its objects set forth in the charter as follows:

For the purpose of advancing the mining and metallurgical industries, in all their various branches, within the United States; to assist in bringing about a more perfect cooperation between the Government of the United States and the development of mining and metallurgy; to encourage education in practical and scientific mining and metallurgy, and the dissemination of scientific information in relation to mining, metallurgy and their allied industries; to acquire and disseminate trustworthy information bearing upon the development of the metallic and non-



HON. J. H. RICHARDS  
President 1903-1909





JOHN DERN  
President 1911

Channing, S. A. Taylor, Charles W. Goodale, James W. Malcomson, J. R. Finlay, Dr. James Douglas, Walter R. Ingalls, to mention only a few of the mining leaders, were taking part in the deliberations of the Congress, and from this time on the resolutions passed were accepted by both Houses at Washington as authoritative in the mining world.

James F. Callbreath became secretary of the Congress at the convention held in Portland, Oreg., in 1904, and through his efforts the development of the work of the Congress has been carried forward.

In this period between 1904 and 1909 Dr. Joseph A. Holmes, who afterward became the first Director of the Bureau of Mines, was putting forth splendid effort for the development of the work of the Congress, working hand in hand with Secretary Callbreath.

Pittsburgh was the scene of the next meeting and here the East heartily welcomed the Congress. Then within two years, and by reason of the splendid help given the original idea by the coal interests of the country, Congress passed the act creating the Bureau of Mines. Thus, with the coal men joining their problems and energies to those of the Congress, the organization assumed its true place in the field of nation-wide cooperation.

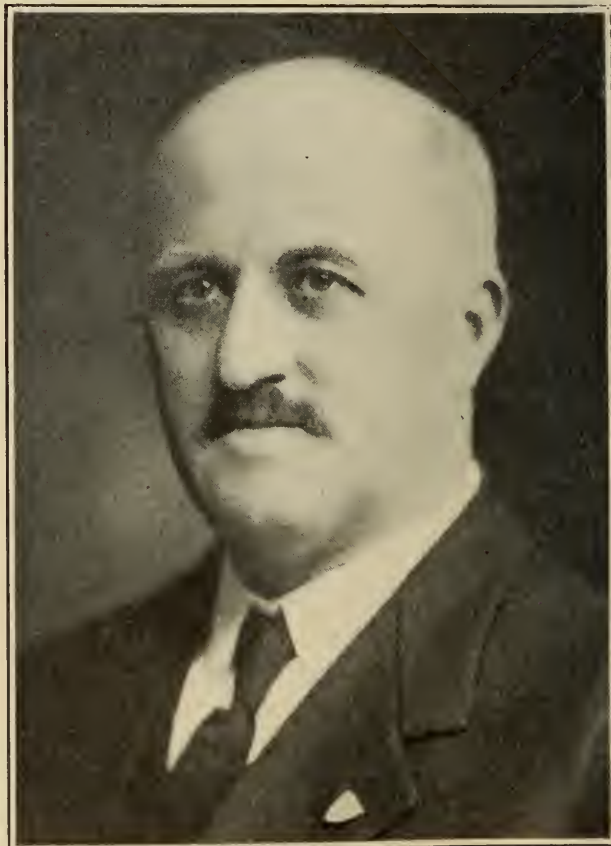
First it was in Pittsburgh that the proceedings of the Congress commanded world-wide attention, for here many notable papers were read.

metallic mining resources of the United States; to promote a more cooperative tendency in the evolution of agriculture, mining, manufacturing, transportation and commerce, and for the particular purpose of bringing the mining men of the United States into closer relations with one another and of promoting a friendly feeling for one another through social intercourse and the discussion of mutual subjects.

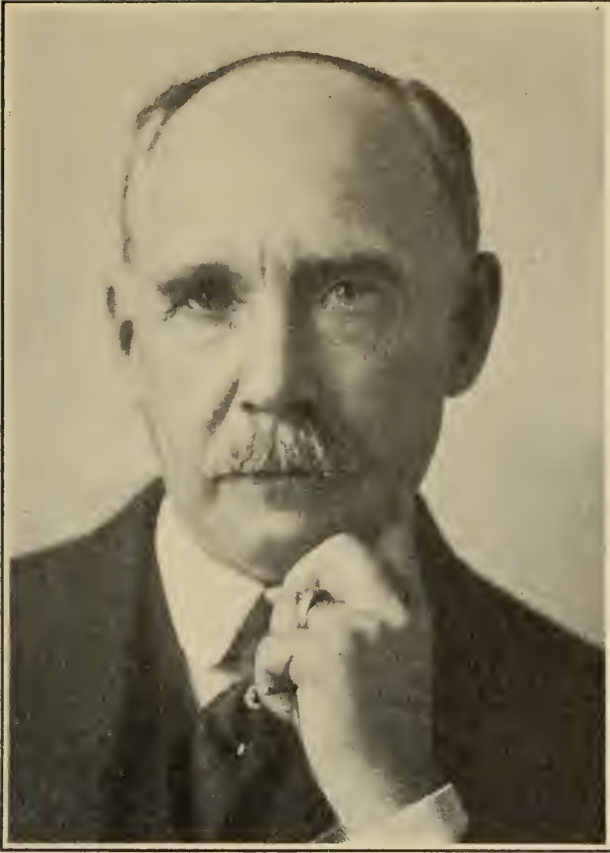
Prior to the Pittsburgh meeting of the Congress, in 1908, the major portion of the membership came from the metal mining industry, but at that time coal operators became interested in the work, realizing that the Mining Congress was not a sectional or factional organization, but was the best available organization to present to the country at large the economic needs of the mining industry. It had become apparent that the organizations confined to technical matters or restricted to certain states and territories might duplicate their efforts and work to cross purposes, due to the lack of contact with each other.

For four years previous to this meeting the great mining engineers of the country had been taking part in the deliberations of the Congress, and for this period the President of the United States had been appointing delegates to the annual meetings.

Then it was that the leaders of the industry realized that only by such cooperation as that furnished by the American Mining Congress could the industry be uplifted and made a great power in the United States. Representative men, such as Hennen Jennings, D. W. Brunton, John Hays Hammond, J. Parke



SAMUEL A. TAYLOR  
President 1912



D. W. BRUNTON  
President 1913

United States Senator Charles Dick, of Ohio, discussed "Relation of the Federal Government to Mining," while Edward H. Harri- man, noted builder of railroads and one of the leading authorities of the country on trans- portation, took for his topic "Transportation of Mineral Products." Carroll D. Wright spoke on "The Importance of Arbitration as a Factor in the Advancement of the Mining Industry," while Secretary of the Interior James Rudolph Garfield delivered a notable address on "The Federal Government in Its Relation to the Mining Industry."

It was also at this convention that Dr. J. A. Holmes delivered an address on "Problems of the Coal Mining Industry," while John Mitchell discussed "Conservation in the Coal Industry," and Judge George Gray, of Dela- ware, and Thomas H. Lewis, president of the United Mine Workers of America, discussed "Arbitration as a Factor in the Mining Indus- try." Dr. George Otis Smith, Director of the United States Geological Survey was heard on "Distribution of the Nation's Mineral Wealth."

At Goldfield, Nev., at the Congress in 1909, Secretary Callbreath announced the first great advance to establish the Bureau of Mines when he said:

During the Sixtieth Congress a bill was introduced in the Lower House for the creation of a Bureau of Mines and passed by that body by a vote of 229 to 21. The bill was approved by the Senate committee, but was talked to death in the final hours of the session. We will have to begin our work over again.

The effort of the Congress for the passage of the proposed legislation was redoubled, and at the Congress in Los Angeles in 1910 Dr. J. A. Holmes delivered his first address as Direc- tor of the Bureau of Mines. At this time the ramifications of the bureau became apparent, and the Congress began formulating by reso- lution much of the work which the newly created organization was expected to accom- plish. The latitude here extended from effective "safety" measures for both coal and metal mines to a most comprehensive exploita- tion of the underground resources of the United States. It meant that the Congress must urge the largest possible appropriation for effective work.

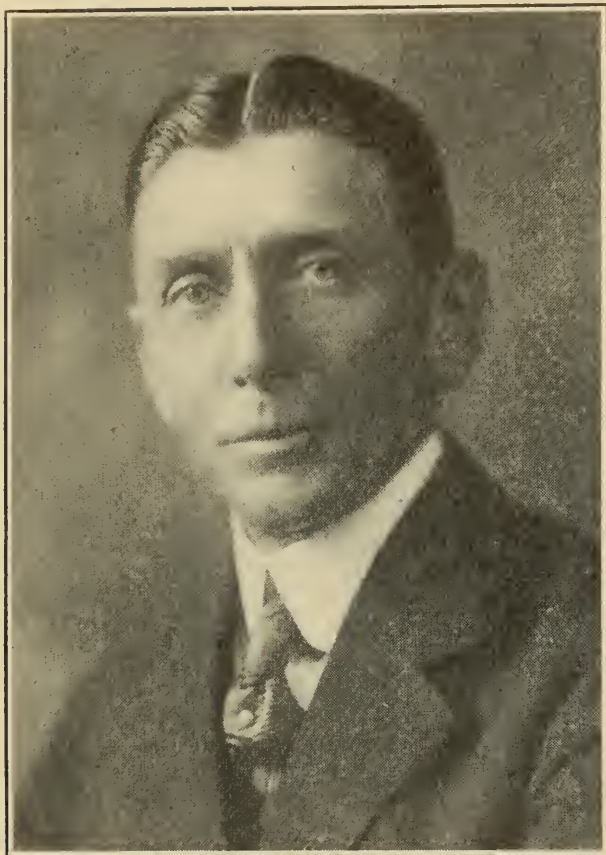
Headed by Walter R. Ingalls, chairman, the Committee on Prevention of Mine Accidents at this Congress made its report, the recom- mendations of which have since been incor- porated into the statutes of many of the min- ing states of the country. John Hays Ham- mond, J. Parke Channing, Dr. James Douglas and James R. Finlay were the other members of this committee, which was first appointed by the American Mining Congress in 1906.

Another noted report was also submitted to this Congress when that of the Committee on Standardization of Electrical Equipment in Coal Mines was presented. The proposed code of rules presented at this time and revised at subsequent sessions have also since been in- corporated in the statutes of many of the States of the Union.



CARL SCHOLZ  
President 1914, 1915, 1916





WALTER DOUGLAS  
President 1917-1918

The Congress of 1911, in Chicago, was an event of great import, for it was at this time that the President of the United States, Hon. William H. Taft, was in attendance and delivered an address on the topic "The Government and the Mining Industry." M. Jean de Pulligny, Director of the French Mission of Engineers to the United States, was another notable guest at this convention, whose address covered conditions of mining abroad. Hon. John Dern, of Salt Lake City, presided at the sessions, and Dr. Martin D. Foster, chairman of the House Committee on Mining; Gov. William Spry, of Utah; Hon. Walter L. Fisher, Secretary of the Interior, and Carl Scholz, of Chicago, were also included in the list of speakers of this Congress.

The detailed report of the Committee on Standardization of Electrical Equipment in Metal Mines was submitted at the Congress held at Spokane, Wash., in 1912, at which Samuel A. Taylor, of Pittsburgh, presided.

President David W. Brunton, of Colorado, presided at the Congress held in Philadelphia in 1913, when the cooperation of the American Institute of Mining Engineers and the Mining Metallurgical Society of America was announced.

Senator John F. Shafroth, of Colorado; Senator Thomas J. Walsh, of Montana; Secretary William B. Wilson, of the Department of Laobr; Assistant Secretary A. A. Jones, of the Department of the Interior; Hon. Martin

D. Foster, and Dr. J. A. Holmes delivered addresses at the sessions.

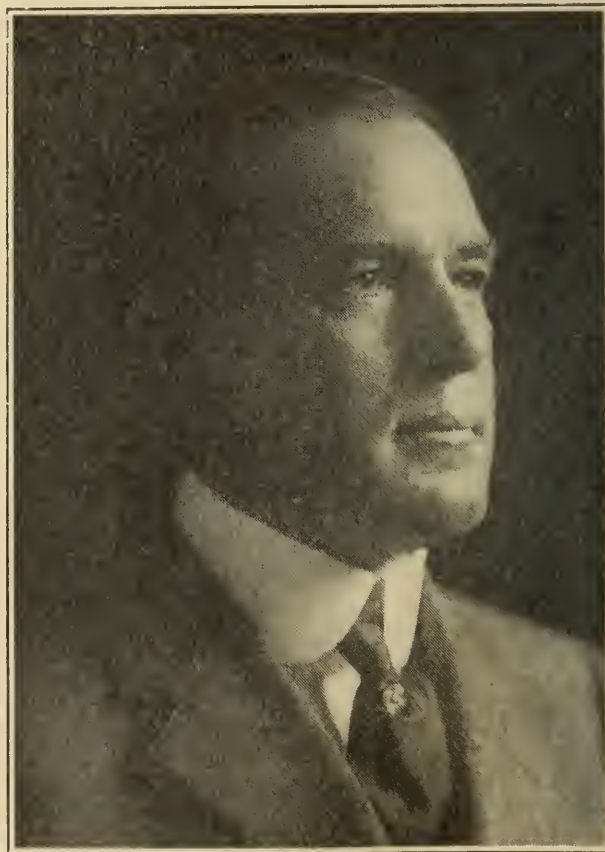
"It will always be a tribute to your foresight and energy that this new Bureau of Mines, in the short period of its existence, with the kindly cooperation of state and other agencies, has been able by persistent and intelligent effort to turn an isolated local movement for greater safety into a great national movement for 'safety first' that has already gone beyond the mining industry into every industry of the country," wrote Hon. Woodrow Wilson, President of the United States, in a letter to the seventeenth annual Congress, held at Phoenix, Ariz., in 1914.

"I venture to say," the Chief Executive continued, "that thousands of lives have been saved by that movement, and that many thousands more will be saved in the future."

Summarizing, he also declared: "Gratifying as the results of this life-saving campaign may have been, however, there is still vigorous work for your Congress to do. I am informed that during the last year more than 3,000 men were killed and 100,000 injured in the mining and metallurgical industries of the country. . . . I suggest this situation as an opportunity for further endeavor on your part to cut down this excessive toll of death and injury."

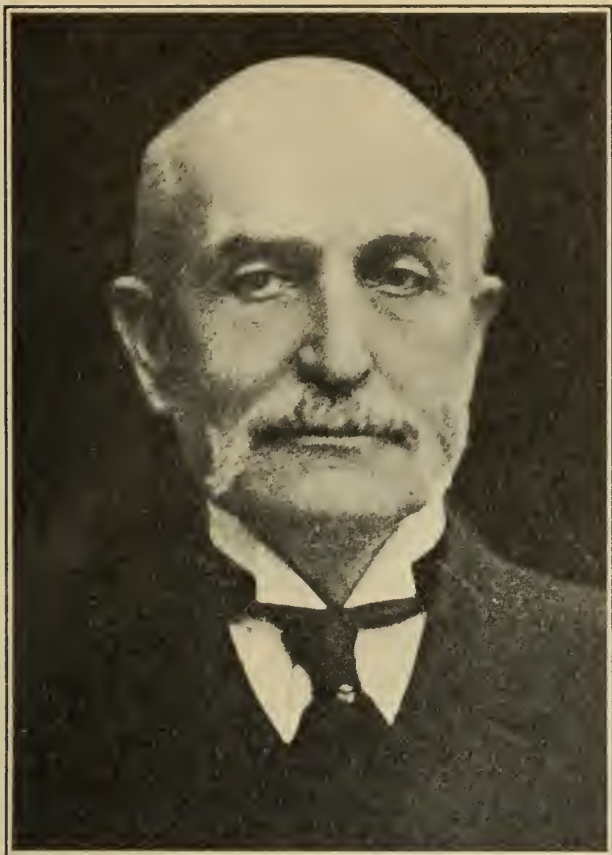
Later during the gathering Dr. Joseph A. Holmes, in his final address, placed special emphasis on the duty of the mining industry to educate the public as to what the industry is and means to the nation.

At length, he described how the railroads of the nation followed the policy of what they termed "quiet work," through which they endeavored to control legislation by interviewing on the side important politicians, and



GEO. H. CROSBY  
Director





M. S. KEMMERER  
Director

which they found the American public rebelled against.

"That is the sort of thing which at the present time won't go," Dr. Holmes added, "and they have found it to be the case."

He then pointed out how the roads decided on their next move, declaring:

They have come squarely out into the open. They have organized, as was told you here the other evening, a bureau of railroad economics, a bureau of information, which they support in Washington. That bureau has done so much good to the railroads that it has brought about recently a rehearing before the Interstate Commerce Commission on the rate question, and in many ways it is securing fair treatment for the railroads.

The splendid work which the American Mining Congress is doing for the advancement of the mining industry was then commented on by Dr. Holmes, who, in concluding, averred:

Just as soon as the mining interests of this country all pull together—and the American Mining Congress is the best organization through which they can pull together—in my judgment, they will educate public opinion in this country so that unjust taxation and unfair legislation which will endanger the industry will become an impossibility.

At this convention it was determined to begin the publication of the MINING CONGRESS JOURNAL, the first issue of which appeared in January, 1915. This publication has developed a field of its own among mining papers. It is devoted chiefly to the dissemination of Washington news of interest to the industry.

Despite the important developments continually taking place in the Capital, there previously was no ready way for mining men to obtain this information. Now, through the JOURNAL, it is possible to get, month by month, the detailed work that is being done with the \$2,000,000 which the Government appropriates for the aid of mining. Traffic matters with a bearing on mining are caught from each day's grist at the Interstate Commerce Commission. Each step of legislative matters of interest is chronicled. The latest legal decisions throughout the country, as well as those of the Supreme Court and other courts in Washington are summed up. Mineral land decisions, mining patents, and many other important matters of this great industry are being covered for the first time. In addition, the JOURNAL furnishes a ready medium for keeping members in close touch with the work of the Mining Congress.

The notable event of the eighteenth annual Congress, held at San Francisco in 1915, with President Carl Scholz presiding, was the Holmes memorial service, at which a vast host of admirers and friends paid tributes to the work and character of the late Director of the Bureau of Mines. At this convention Hon. Van H. Manning, the new Director of the Bureau of Mines, made a notable address on "What the Bureau of Mines, in the Department of the Interior, Is Doing and Hopes to Do for the Metalliferous Industry."

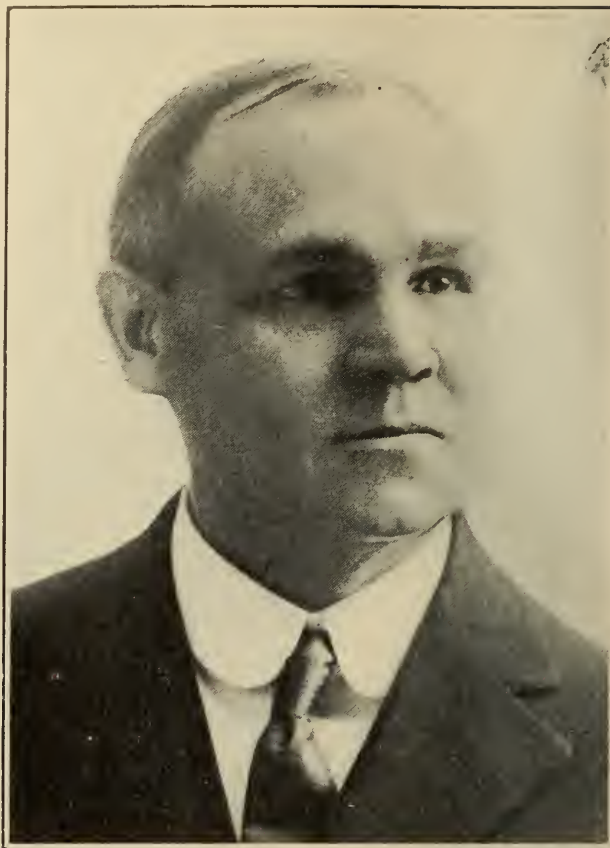


L. A. FRIEDMAN  
Director





C. M. MODERWELL  
Director, American Mining Congress



JAMES E. TALMAGE  
Director, American Mining Congress

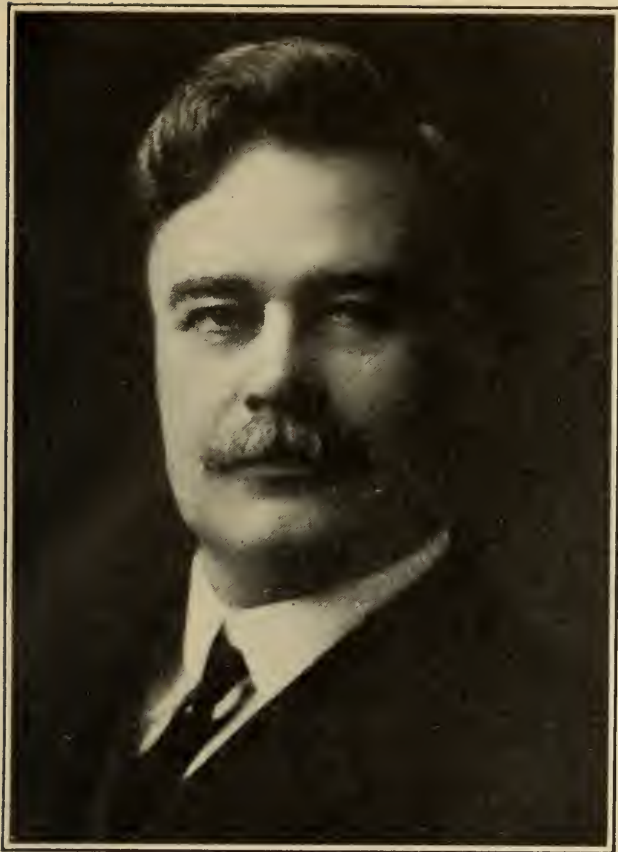
Hon. Edward N. Hurley, of Chicago, then chairman of the Federal Trade Commission, was one of the principal speakers of the Congress held in Chicago in November, 1916, he discussing "The Federal Trade Commission and the Mining Industry." Other notable addresses were delivered by Dr. E. W. Parker, of Wilkes-Barre, Pa., on "Cooperation, Conservation and Competition in Coal;" J. C. McDowell, of Pittsburgh, on "Geology in Its Relation to the Oil Industry;" Hon. Van H. Manning, Director of the United States Bureau of Mines, on "Federal Aid to Mining Efficiency;" D. A. Lyon and O. C. Ralston, Washington, D. C., on "Present Status of the Oil Flotation Process;" Dr. Walter F. Rittman, Pittsburgh, Pa., "Dyes and Explosives from Coal and Petroleum;" Thomas L. Lewis, Charleston, W. Va., "The Responsibility and Duties of the Miner in Mine Safety Work;" Louis Titus, California, "The Federal Government and the California Oil Claimants;" Hon. F. H. Short, Fresno, Cal., "Conservation: Its Purpose, Its Effect," and Dr. A. H. Purdue, Nashville, Tenn., "The State Geologist and Conservation."

On account of the demand upon the time and effort of the leaders of the mining industry by reason of the entry of the United States into the world war, a decision was reached to hold no meeting of the Congress this year, and following this the Board of Directors met in New York during the past month and formulated the program for the organization dur-

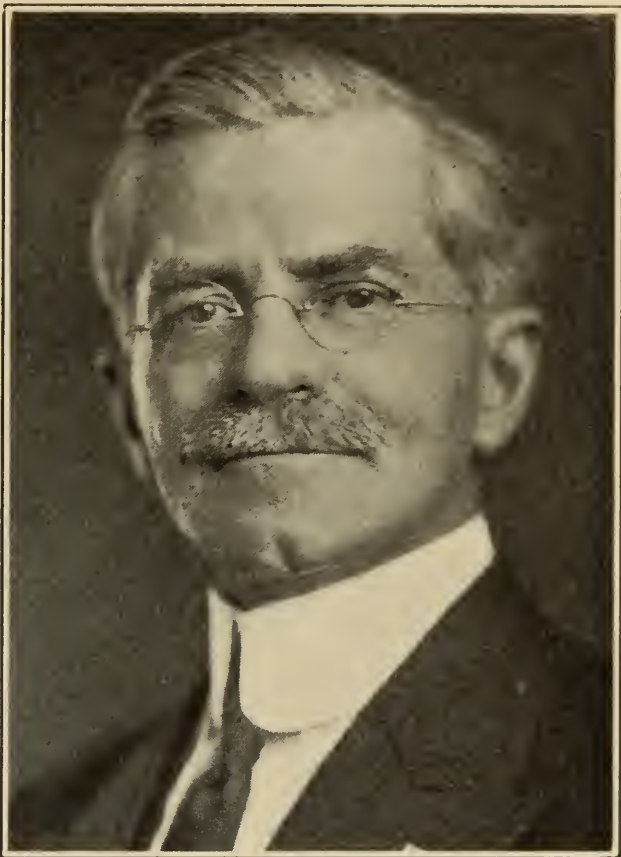


CHARLES S. KEITH  
Director, American Mining Congress

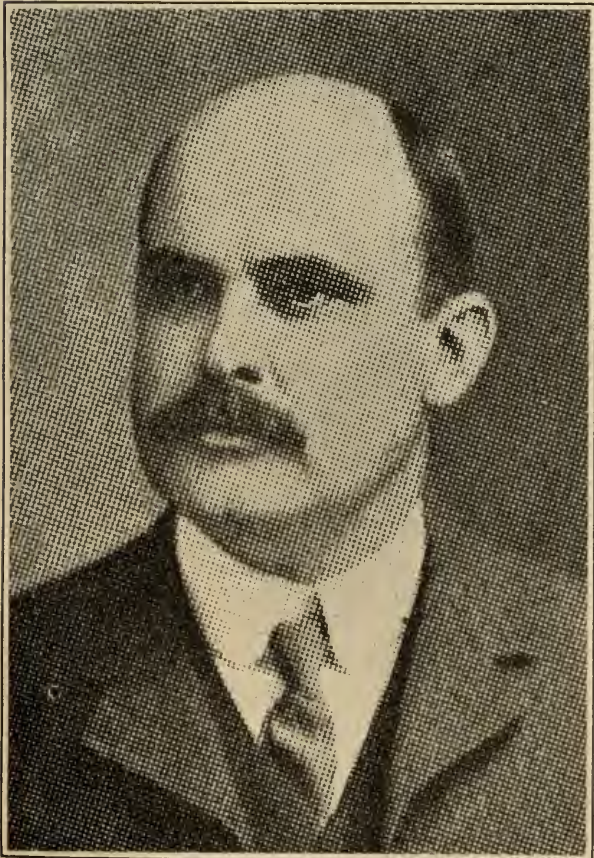




JAMES BARNESON  
Director, American Mining Congress



*Harris & Ewing*  
JAMES F. CALLBREATH  
Secretary, American Mining Congress



W. J. RICHARDS  
Director, American Mining Congress

ing the coming year, one which will mark for great progress in the advancement of mining in this time of national emergency, which calls for every man with his shoulder to the wheel, that the democracy of the world may be made safe for all time.

PRESIDENTS

- HON. ALVA ADAMS, Pueblo,  
Colo. ....1897  
HON. L. BRADFORD PRINCE,  
Santa Fe, N. Mex.....1897-1898  
HON. B. F. MONTGOMERY, Crip-  
ple Creek, Colo.....1899-1900  
HON. L. BRADFORD PRINCE,  
Santa Fe, N. Mex.....1901  
E. L. SHAFNER, Cleveland, O..1902  
HON. J. H. RICHARDS, Boise,  
Idaho .....1903 to 1909  
DR. E. R. BUCKLEY, Rolla, Mo.1910  
JOHN DERN, Salt Lake City,  
Utah .....1911  
SAMUEL A. TAYLOR, Pitts-  
burgh, Pa.....1912  
DAVID W. BRUNTON, Denver,  
Colo. ....1913  
CARL SCHOLZ, Chicago, Ill....1914 to 1916  
WALTER DOUGLAS, New York,  
N. Y. ....1917-1918



**GERMANY'S PLEDGES TO AMERICA**

No. 1 (July 8, 1915).—"The Imperial Government repeats the assurances that American ships will not be hindered in the prosecution of legitimate shipping, and the lives of American citizens on neutral vessels shall not be placed in jeopardy."

No. 2 (September 1, 1915).—"Liners will not be sunk by our submarines without warning and without safety of the lives of noncombatants, provided that the liners do not try to escape or offer resistance."

No. 3 (October 5, 1915).—"The orders issued by His Majesty the Emperor to the commanders of the German submarines . . . have been made so stringent that the recurrence of incidents similar to the Arabic case is considered out of the question."

No. 4 (May 4, 1916).—"In accordance with the general practice of visit and search and destruction of merchant vessels recognized by international law, such vessels, both within and without the area declared as naval war zone, shall not be sunk without warning and without saving human lives, unless these ships attempt to escape or offer resistance."

**ALL OF THEM RUTHLESSLY  
BROKEN**

### **THIRTY-FIVE CENTS ADDED TO ANTHRACITE PRICES**

#### **President Follows Recommendation of Dr. Garfield—Roosevelt Commission Comes in for Praise**

Acting on a recommendation from Dr Harry A. Garfield, Fuel Administrator, the President has issued the following executive order:

"The scale of prices prescribed August 23, 1917, by the President of the United States for anthracite coal at the mines, adjusted as to pea coal October 1, 1917, by order of the United States Fuel Administrator, is hereby amended by adding the sum of thirty-five (35) cents to each of the prices so prescribed or adjusted, provided, however, that this increase in prices shall not apply to any coal sold at the mines under an existing contract containing a provision for an increase in the price of coal thereunder, in case of an increase of wages paid to miners.

"This order shall become effective at 7 a. m. on December 1, 1917."

The following is Dr. Garfield's letter to the President on which the order was based:

"The labor problem in the anthracite mines is not different in any material respect from

that in the bituminous fields. Most of the comment in my letter of October 26, is applicable to the anthracite situation. It is, therefore, unnecessary to repeat it here.

"On the 17th day of November, after a conference of about two weeks, the anthracite operators and miners reached an agreement, a copy of which I enclose.

"In response to my request, the operators' association furnished statements showing in detail the tonnage and actual labor costs since the last wage increase, May 1917, and the additional cost per ton if the increase of November 17, is added. These figures were based upon an examination of over 68,000,000 tons or 85 per cent of the total tonnage estimated for 1917. If the proposed wage increase becomes effective, the increased cost placed upon the operators will range from 26 cents per ton to 56 cents per ton. A small high cost tonnage shows additional costs per ton as high as 70 cents. The weighted average of the above mentioned tonnage accurately figured, is 37.2 cents per ton. The increased cost to operators producing about 41,000,000 tons or substantially one-half of this year's tonnage, will be 35 cents and upward per ton.

"I, therefore, respectfully recommend that the prices fixed by your proclamation of August 23, 1917, as modified with respect to the price of pea coal by my order of October 1, 1917, be uniformly increased in the sum of 35 cents per ton, provided, however, that these increases shall not apply to any coal sold at the mine under existing contract containing a provision for an increase for the price of coal thereunder, in case of an increase in wages paid to miners.

"In this connection, I desire to say that it is my expectation to order the reduction in anthracite prices which has been regularly given beginning April 1, 1918.

"I desire also to call attention to the fact that the Board of Conciliation created by the Commission appointed by President Roosevelt in 1902, has performed its tasks so acceptably to all concerned that there is no occasion for the introduction of an automatic penalty clause as provided in the case of the bituminous field, nor was the inclusion of any such clause provided for in the agreement of November 17, between the operators and the mine workers."

The agreement entered into by anthracite operators and miners to which Dr. Garfield refers in his letter to the President is as follows:

Whereas, on May 5, 1916, an agreement was entered into by the parties hereto, covering wages and working conditions in the Anthracite Field of Pennsylvania, for the four-year period beginning April 1, 1916, and ending March 31, 1920;

And whereas, by reason of conditions that arose as a result of the war, the parties hereto under date April 25, 1917, entered into a sup-

plemental agreement, modifying the wage compensation provided in said agreement of May 5, 1916;

And whereas, by reason of further changes in conditions that have arisen since the date of said supplemental agreement of April 25, 1917, the parties hereto have deemed it advisable and necessary to make further increase in the wage compensation provided in said supplemental agreement as hereinafter more specifically set forth;

Now therefore this agreement witnesseth: That in lieu of the voluntary advances made under the agreement of April 25, 1917, the following advances are proposed to be applied to the rates established under the agreement of May 5, 1916;

(a) Contract hand and machine miners shall be paid an advance of 25 per cent on their gross earnings.

(b) Consideration miners shall be paid an advance of 25 per cent on their earnings.

(c) Contract miners' laborers shall be paid an advance of 30 per cent on their earnings.

(d) Consideration miners' laborers shall be paid an advance of 25 per cent on their earnings.

(e) Day machine miners' laborers, who received not less than \$2.72 per day, shall be paid an advance of 25 per cent on their earnings.

(f) Outside engineers working a 12-hour cross-shift, and firemen, shall be paid an advance of \$1.10 per day for each day worked. All other outside company men, who receive \$1.54 or more per day, shall be paid an advance of 90 cents per day for each day worked.

(g) Inside engineers and pumpmen, working a 12-hour cross-shift, shall be paid an advance of \$1.10 per day for each day worked. All other inside company men, who received \$1.54 or more per day, shall be paid an advance of \$1 per day for each day worked.

(h) All employees paid by the day, who received less than \$1.54 per day shall be paid an advance of 60 cents per day for each day worked.

(i) Monthly men coming under the agreement of May 5, 1916, shall receive an advance per day for each day worked, equivalent to that provided for their respective occupations under paragraphs "F" and "G."

(j) The advances of \$1.10 per day, \$1 per day, 90 cents per day and 60 cents per day, provided above, are to be applied to a day, whether eight hours or more, as established under the agreement of May 5, 1916; any proportionate part of a day to be paid a proportionate part of the advances herein provided.

(k) The employees of stripping contractors, paid by the day, working on the basis of a 9-hour or 10-hour shift, shall be paid the same increase per hour for each hour worked that is provided for outside company men working on an 8-hour basis.

It is understood and agreed that except as herein provided, all of the covenants and conditions of the agreement of May 5, 1916, shall remain in full force and effect.

And it is further understood and agreed that this contract will become effective only on condition that the selling price of coal shall be advanced by the United States Government sufficient to cover the increased cost of production and will not take effect until the first day of the pay period following the order granting such increased price.

Subject to the foregoing provision, the contract will remain in effect during the period of the war, or until March 31, 1920 in case the war is not terminated before that date.

In witness whereof, the parties hereto have caused this agreement to be properly executed this Seventeenth day of November, Nineteen Hundred and Seventeen.

On behalf of Anthracite Operators:

(Signed) W. J. Richards,  
S. D. Warriner,  
Daniel B. Wentz,  
W. L. Connell.

On behalf of Anthracite Mine Workers' Organization:

(Signed.) John T. Dempsey,  
President, District No. 1.  
Thomas Kennedy,  
President, District No. 7.  
James Matthews,  
President, District No. 9.  
Frank J. Hayes,

President of United Mine Workers of America, representing Anthracite Mine Workers' Organization.

## JELICO COUNTIES GET

### TENTATIVE PRICE INCREASE

A temporary increase of 25 cents per ton has been granted by the United States Fuel Administration to coal operators in various counties in the Jellico region of Kentucky and Tennessee by reason of the fact that apparently the operators of this region had failed to understand the rules of the Administration regarding the filing of cost sheets as a preliminary to applications for change of price.

The Fuel Administration again calls the attention of operators to the fact that its rules must be carefully observed in making applications for re-classifications of mines or revisions of prices.

The rule covering such applications provides that all such applications must be based on statements of costs made out on the forms provided by the Federal Trade Commission, which cost sheets must cover the year 1916 as a whole and the year 1917 by months to the date of the application, and must be filed with the Federal Trade Commission.



## BASIS OF SETTLEMENT IN OIL FIELD DISPUTE

### President's Mediation Commission Announces Conditions on Which California Operations Should be Conducted

The basis of settlement made by the President's Mediation Commission of the oil situation in southern California, covering all refineries and pipe lines except those of the Standard Oil Company, and involving 10,000 men is as follows:

First: That the eight-hour day already in effect with various California oil companies shall be put into effect by all California oil operators as of January 1, 1918, with the following proviso:

(a) If the oil operators whose good faith in this entire matter is absolutely beyond question are not able, owing to labor and other conditions, to put the eight hour day into effect by that date, the workingmen affected will upon request of the Government of the United States, beginning January 1, 1918, work eight hours per day for their present employers and upon the request of the Federal Government will work as many more hours as the President of the United States or his representatives may request.

(b) To insure to the workers the good faith of the employers, a committee of three Federal inspectors shall be appointed by the Secretary of Labor of the United States who shall have full access and full authority to inspect all the activities of the oil operators and shall render reports to the United States Government and the State Executive Board of the Oil and Gas Well Workers Union and any company affected as to progress being made.

Second: The minimum wage scale for oil workers shall be \$4 for eight hours' work, which wage scale shall apply as from December 1, 1917.

Third: No man shall be discriminated against or intimidated because of membership in any union affiliated with the American Federation of Labor, and the officers of such union shall agree that neither they nor the members thereof will discriminate against nor intimidate any non-union man because of his failure to belong to a union.

Fourth: In case of disputes or disagreements between the employers and employees or on any matter affecting the findings of the President's Mediation Commission which cannot be settled through the existing channels the machinery of the United States Government shall be used with the Secretary of Labor as the final arbitrator.

Falcon Joslin of Seattle, Washington, and Fairbanks, Alaska, is again in the East, after an extended trip which included the interior of Alaska.

## ESSENTIAL ACTIVITIES TO GET COAL FIRST

### Government Orders, Railway Fuel and Domestic Requirements Lead Preferential List

Requests to coal operators issued by the U. S. Fuel Administration have established the order of preference in which coal needs are to be filled. The requests, directed to some five thousand producers throughout the country, provide for preferential shipments for thirty days.

The requests are designed by the Fuel Administration to insure the fulfilling of the requirements of those coal users whose activities are essential to the military and economic efficiency of the nation in the conduct of the war. They are not in the form of direct orders of the Fuel Administrator, but all producers are asked to cooperate in meeting these requests.

The following request was directed to all operators in Ohio, Michigan, Kentucky, Illinois, Indiana, Alabama, Tennessee, Colorado and Oklahoma:

"Subject to compliance with orders heretofore issued by the Fuel Administration for preference in shipments for certain specified purposes, the Fuel Administration requests that you give preference in shipments for the next thirty days on Government orders, railway fuel, domestic requirements, public utilities, and munition plants.

"It is necessary in the present situation to give preference in shipments as requested, and we solicit, and thank you in advance for your cooperation in this direction.

"We will appreciate it if you will advise the Fuel Administration of any free tonnage you have available which we may call on you to ship for emergency requirements."

All operators in Pennsylvania and Kentucky were requested in a similar form to give preference in shipments for the next thirty days on "Government orders, railway fuel, domestic requirements, public utilities, steel plants, by-product coke ovens and munition plants."

All operators in West Virginia and Virginia were requested to give preference to shipments for thirty days on "Government orders, railway fuel, tidewater shipments for New England, domestic requirements, public utilities and munitions plants."

The requests cover practically all of the coal production of the country, outside of the Rocky Mountain coal districts. The Rocky Mountain output is largely consumed in the localities which it is produced.

E. T. Bent and Mrs. Bent, of Chicago, Ill., have been spending a considerable time in the national capital.

## STEEL PRODUCTION IN 1917 SHOWS A FALLING OFF

**Output Must Be Stimulated in 1918, but Uncertainties of Situation Militate Against Increasing Production.**

The trend of the development of the iron and steel industry in the future, practically like that of every other trade, will depend largely upon the progress of the war and the call to be made upon the United States to furnish the sinews for continuance of the conflict against Germany. The industry today is so different from what it was before the war began that a manufacturer who withdrew from the business early in 1914 would hardly believe the prevailing conditions should he decide to enter the trade again.

Federal regulation and the matter of costs are the two factors vitally responsible for the changes which have been made in the industry. Costs alone were to blame up to a few months ago, but since then the Government has taken such steps, and is threatening to take others, that the whole aspect of the situation has again been changed. Just what is in store for the steel makers is a question which any of them would pay big to have answered.

Under Government regulation may be classed the increased taxes, a very vital factor, and the agreement of the steel men, under Government sanction, on lower prices for their products. These two influences, sharply linking with the matter of costs, may yet go further than anyone has dared anticipate. Which brings up consideration of the possibility of contract abrogation and the revision of prices on the present cost basis.

Costs, like in almost every other industry, have almost revolutionized the steel trade. Labor, materials, transportation, the increased costs of which added to the shortage of each, have been tremendous elements in the whole scheme, bid fair to continue as the prime agents of future reckonings. What will be done in regard to labor is not known. Curtailment of so-called non-essential industries will, in a measure, relieve the labor shortage, and will release certain materials and free a portion of the railroads' rolling stock. But that probably will not be all.

The Federal Trade Commission is compiling views of the steel makers, raw material producers, and finished product consumers on the question of contract abrogation. This is preparatory to submission to the Senate's Committee on Interstate Commerce, which has under consideration the Pomerene Bill, which would regulate the industry from the mining of iron and alloy ores up to the marketing of finished steel products. The present session of Congress will deal with the measure.

The Commission is of the opinion too much material entering into the manufacture of iron and steel and, in some cases, too many finished products are contracted for at too high rates

to enable the prices now in effect on "free" material to be of much benefit. Just how far abrogation will go with contract periods drawing to a close, and the lower prices automatically effective on future orders, is an interesting subject.

The steel industry already practically is under absolute Government control. The Navy, the Army, and the Shipping Board have power to commandeer plants, equipment, and materials as they see fit, and the President's priority powers, believed to extend even to supplying labor, control shipments of raw and finished steel products; enough authority to force any maker into line. In addition, the power of the War Trade Board over imports and exports, and of the Shipping Board over ocean tonnage, are more than sufficient to deal stringently with most steel makers.

The year 1917 may see a falling off in production of all steel raw and finished materials. General unrest, due to hesitancy of the Administration in carrying out proposed policies, uncertainty of Congressional action in the matter of taxes, doubt about the fairness of some Government officials in dealing with steel production control, and general disturbance brought on by the entrance of the United States into the war, are elements which may class the year as a bad one, as far as production is concerned. Production must be stimulated in 1918, but it is believed to have been urged too late and amid too uncertain conditions for much good in 1917.

## PRICES "SUBJECT TO REVISION" ARE ORDERED SUSPENDED

Coal dealers, from the operator to the retailer, are prohibited from selling coal at prices, "subject to revision," by an order issued November 16 by Fuel Administrator Harry A. Garfield. Heretofore the United States Fuel Administration has allowed all producers to sell their coal at prices fixed by the Government, with a stipulation in the selling agreement that the price might be revised if the Government fixed prices were changed.

Under this arrangement, prices were made "subject to revision" from the operator to the jobber, and from the jobber to the retailer. The retailer usually found it difficult to collect any difference from the consumer after a retail sale had been made at a price based on the Government price scale. To eliminate this and other difficulties which this plan entailed, the Fuel Administration will hereafter insist that such sales be made and coal paid for at Government prices as fixed at the time of the sale, without any provision for revision. The following order, effective at 7 o'clock a. m., November 16, 1917, was issued:

"Hereafter consignments of coal shall be made on the basis of a fixed price, not subject to revision on account of any subsequent regulation of price by the United States Government."



## COLORADO NOW IN LINE FOR BIG NATIONAL WORK

### Metal, Coal and Oil Men in Centennial State Organize Strong Chapter

After having been without official connection with national mining movements for several years, the mining men of Colorado, some of whom have been active and enthusiastic members of The American Mining Congress for a long time, have finally completed a Chapter for Colorado, including plans for active coal and oil sections when the details can be worked out.

The organization meeting was held on the evening of November 28 in Denver, and there were present members from several outside camps despite the fact that but short notice was given in advance of the meeting owing to the necessity for quick action in response to the telegraphic invitation to join in the Salt Lake conference December 4.

The officers and directors of the Colorado Chapter are among the most representative men in the State, and all are pledged in advance to assume the necessary hard work and sacrifice entailed in successful work of this nature. Fully 150 officers of the leading corporations and larger independent mines of Colorado have already enrolled in the Chapter as active members, and the goal has been set for 300 active and several hundred associate members.

John T. Burns, western secretary of the Mining Congress, has been at work in Colorado during the past several weeks, and the membership has been carefully selected to represent the actual mining interests. He has been ably assisted by Irving T. Snyder, general manager of the Vindicator properties, and who is a member of the national board of the Congress, also by Irving Howbert, chairman of the board of The Portland Gold Mining Company, who is also vice-president of the Congress for Colorado. Another very active committeeman has been George L. Nye, a prominent mining attorney of Denver, who is also secretary of the Colorado Mill Operators Association.

The letter calling for the organization of the Chapter was signed by sixteen of Colorado's leading mining and oil men, and carried the following significant statement:

"During a period of twenty years The American Mining Congress has rendered valuable service to the mining industry of the United States. It was organized in Colorado, and has always been distinctly a Western organization. In recent years its field of activity has been enlarged to take in coal, iron and oil—though its greatest work must always be in the metal mining sections.

"The undersigned wish to endorse this work. We, as active members of The American Mining Congress, believe it is to the best interests

of Colorado mine operators and all affiliated industries to act in union with adjoining States in national matters; and that Colorado should have a live, well-organized Chapter. Through organization under the Mining Congress plan we become part of a great national industrial movement, very necessary at this time.

"The Colorado Chapter will cooperate with all Colorado bodies engaged in furthering the interests of mining in this State, and will make it possible for us to deal with all national legislation, either favorable or unfavorable to the mining industry."

The following were elected:

Directors for two years: Samuel D. Nicholson, president of the Western Mining Company, Leadville; Charles A. Chase, general manager of the Liberty Bell Mines, at Telluride; Robert S. Ellison, Midwest Refining Company, Denver; Irving T. Snyder, Cripple Creek; Robert M. Henderson, manager Wellington Mines, Breckenridge; Rens E. Schirmer, manager the Argo Mining, Drainage T. & T. Company, Idaho Springs; Max Schott, manager The American Metals Company, Denver.

Directors for one year: Frank Bulkley, president of the Crested Butte Anthracite Coal Company, and well-known silver producer; George L. Nye, of Denver; Judge E. A. Colburn, president of the Ajax Company, and president of the Cripple Creek Mine Owners' Association; Warren F. Page, well-known operator at Leadville; Nelson Franklin, manager of the Vindicator interests at Rollinsville; George E. Collins, manager of several properties both in the Clear Creek and San Juan districts; M. S. Macarthy, manager The Molybdenum Products Company, Denver and Summit counties, and J. F. Welborn, president of The Colorado Fuel and Iron Company.

At the organization meeting there was a thorough discussion of the unworkable sections of the excess war profits tax law, and of the metal situation; among the speakers being Congressman Keating, of Colorado, who stated the attitude of the administration, and assured the Chapter that it was not the desire of the central government to block the progress of mining development or to work unnecessary hardship upon any one industry. He assured the Chapter that he would act in behalf of the Colorado operators when Congress reconvened.

Both the tax and metal subjects were finally referred to the newly-elected directors with power to act in behalf of the Chapter. The Chapter authorized a telegram to the Utah Chapter assuring its support of the Western conference called for December 4, the organization of a delegation to be arranged by the Directors.

There was considerable discussion of the recently promulgated circular of The American Defense Society proposing federal control and investigation of promotions and new issues of stocks and bonds. It was reported that there was a strong sentiment existing among actual oil producers in favor of re-



strictive laws to prevent some of the dishonest promotions now being practiced in the oil fields and thus creating confidence in the many first-class and well-protected promotions in all fields of mining. It was, however, the opinion that if the matter is taken into Congress it should be considered from the affirmative standpoint—that is, the passage of a law which will allow promotions and new stock issues to proceed under certain provisions by which misstatements and misrepresentations as to properties and other phases of development shall be punishable in the federal courts under an effective and workable law. The matter was placed in the hands of the directors for further action.

In adopting the by-laws of the Colorado Chapter, there was adopted a new clause not before placed in Chapter laws, whereby ten or more coal operators or the same number of oil operators may organize special sections for these industries with their own chairmen, officers, and committees, and with power to raise and expend special funds for their own purposes, provided none of the acts of these sections shall be in conflict with the Constitution of the Chapter and Congress. Each section will be represented in the general board of directors of the Chapter by two directors selected by themselves and nominated with regular Chapter nominations.

The Chapter authorized a telegram to Secretary Callbreath at Washington, urging him to use the influence of the Mining Congress to secure the appointment of a mining man as a member of the newly-appointed excess profits advisory board of the administrative council. The candidacy of Mark L. Requa, the well-known mining engineer of California, was endorsed.

#### **HARDER URGES USE OF LOW-GRADE MANGANIFEROUS ORES**

There are in the United States large quantities of manganiferous ores containing varying amounts of manganese. A very small proportion of these can be used in the production of high-grade iron-manganese alloys, but a large proportion can be used for lower-grade alloys, and nearly all can be used in making high-manganese pig iron. Compared with the manganiferous ores, the reserves of high-grade manganese ores in this country are insignificant. Hence, although a search for manganese ore is desirable, a more promising solution of the manganese problem would seem to lie in the direction of the utilization of low-grade manganiferous ores. Up to the present time the use of these ores has been very slight. Until a few years ago they were considered to have little value and were mined only incidentally. In the west manganiferous ores would not be mined were it not for their association with ores of other metals.

There are several ways in which the utilization of manganiferous ores may be brought about: (1) It has been suggested that by

methods of concentration resulting in the elimination of iron, silica or other constituents a product high in manganese might be derived from them. Such concentration has been attempted locally, but with very little success, owing mainly to the intimate mixture which manganese generally forms with associated materials. (2) The steel-making practice might be changed so that more spiegeleisen and less ferromanganese would be used for deoxidizing. By the addition of small quantities of high-grade manganese ore much of the manganiferous iron ore could be used in the manufacture of spiegeleisen. (3) The most effective solution, however, as has previously been suggested, seems to be to so change the practice in the manufacture of basic open-hearth steel as to make possible the use of high-manganese pig iron. Experimentation along this line is extremely desirable. The successful application of such a change would make large reserves of manganiferous iron ore commercially available and would greatly decrease the quantity of high-grade manganese ore consumed.

#### **SOUTHWESTERN MINERS ACCEPT GARFIELD'S PENALTY CLAUSE**

Fuel Administrator Harry A. Garfield was advised, November 19, of the final acceptance by both operators and mine workers of the southwestern bituminous coal field, of the Fuel Administration's penalty clause. The automatic penalty clause, which is an effective safeguard against any suspension of coal production by reason of labor disputes, was made a part of a general wage agreement between workers and operators in the southwestern field, following a thorough discussion of its provisions, by a convention of the mine workers at Kansas City.

The acceptance of the penalty clause in the southwestern field, extends its provisions to practically all of the bituminous producing fields. Through the efforts of the Fuel Administration all danger of any considerable halt in the production of bituminous coal through labor difficulties has thus been eliminated. The Fuel Administration is satisfied that the patriotic cooperation of both mine workers and operators, so thoroughly exemplified in the general acceptance of the penalty clause agreement, can be depended upon to increase the bituminous coal output all along the line.

Telegrams from both operators and mine workers in the southwestern field notified the Fuel Administration of the settlement of the dispute over the penalty clause, and Fuel Administrator Garfield, in replying, congratulated both sides on the patriotism evidenced by the final agreement.

With the labor situation in this satisfactory condition, the Fuel Administration is now directing its efforts toward providing ample transportation facilities. Steps will be taken to insure an adequate supply of coal cars, in order that the mines may not be hampered in their efforts to increase production.



## BISBEE DEPORTATIONS CONDEMNED IN REPORT

### President's Mediation Commission Makes Public Detailed Findings as to Conditions in Warren District of Arizona.

The report of the President's Mediation Commission on the Bisbee (Ariz.) deportations is reproduced herewith, as follows:

The deportations on the 12th of July last from the Warren district of Arizona, as well as the practices that followed such deportations, have deeply affected the opinions of laboring men, as well as the general public, throughout the country. These events have even been made the basis of an attempt to affect adversely public opinion among some of the people of the allies. Their memory still embarrasses the establishment of industrial peace throughout the country for the period of the war, and it is indispensable to obtain and maintain industrial peace if the war is to be brought to the quickest possible successful conclusion and if lives are not to be needlessly sacrificed. The President's Mediation Commission is charged rather with helping to secure peaceful industrial relations for the future than to sit in judgment upon the errors of the past. But it is impossible to make for peace in the future unless the recurrences of such instances as the Bisbee deportations are avoided. The future cannot be safeguarded against such recurrences unless a candid and just statement is made of the facts surrounding the Bisbee deportation and an understanding is had of the conditions which brought it about. Such candor is necessary for the guidance of all in their future conduct. Such candor is also necessary because if the truth be authoritatively set forth there will be no basis for any misrepresentation of the facts, either through ignorance or design.

The President's Mediation Commission has therefore deemed it a duty which it could not avoid to undertake a thorough and impartial consideration of the facts surrounding the deportations of the 12th of July and the practices which have been pursued since the deportation by officials and citizens of Cochise county. After hearing the representatives of the different elements involved in the deportation, both official and private, the President's Mediation Commission makes these findings:

1. A strike was called in the Warren district on June 26, 1917, to be effective the following day. While undoubtedly the men sincerely felt that several grievances called for rectification by the companies, having regard to the conditions in this district and the Government's need for its copper production, the grievances were not of such a nature as to have justified the strike. Here as elsewhere there was, however, no machinery for the adjustment of difficulties between

the companies and the men which provided for the determination of alleged grievances by some authoritative, disinterested tribunal, in which both the companies and the men had confidence and before which they had an equal opportunity of urging their respective claims. This is a fundamental difficulty in the settlement of grievances that may arise in this district, and here, as in the other mining camps in Arizona visited by the President's Mediation Commission, a plan has been worked out establishing such machinery whereby in the future, at least during the period of the war, grievances will be settled by an orderly, impartial process, and the resort to strike or lockout will be wholly without foundation.

2. Many of those who went out did not, in fact, believe in the justice of the strike, but supported it, as is common among workingmen, because of their general loyalty to the cause represented by the strikers and their refusal to be regarded in their own estimation, as well as in the minds of fellow-workmen as "scabs."

3. Shortly after the strike was called, the sheriff of the county, through the Governor of Arizona, requested the aid of Federal troops. The request was based on the fact that the State militia had been drafted into the Federal service, and the State therefore was without its normal militia protection. Governor Campbell recommended to the Secretary of War that an immediate investigation of the situation at Bisbee be made by a regular army officer, in order to ascertain the need of troops. The Governor's recommendation was followed, and an investigation of the situation in Bisbee was made by an experienced officer. Such investigation was made on June 30 and again on July 2, and after both investigations the officer reported that everything was peaceable, and that troops were neither needed nor warranted under existing conditions.

4. That the conditions in Bisbee were, in fact, peaceful and free from any manifestations of disorder or violence is the testimony of reputable citizens, as well as of officials of the city and county, who are in a position to report accurately and speak without bias.

5. Early on the morning of July 12 the sheriff and a large armed force, presuming to act as deputies under the sheriff's authority, comprising about two thousand men, rounded up 1,186 men in the Warren District, put them aboard a train, and carried them to Columbus, N. Mex. The authorities at Columbus refused to permit those in charge of the deportation to leave the men there, and the train carried them back to the desert town of Hermanas, N. Mex., a nearby station. The deportees were wholly without adequate supply of food and water and shelter for two days. At Hermanas the deported men were abandoned by the guards who had brought them, and they were left to shift for themselves. The situation was brought to the attention of the War Department, and on

July 14 the deportees were escorted by troops to Columbus, N. Mex., where they were maintained by the Government until the middle of September.

6. According to an army census of the deported men, 199 were native-born Americans, 468 were citizens, 472 were registered under the selective draft law, and 433 were married. Of the foreign-born, over twenty nationalities were represented, included 141 British, 82 Servians, and 179 Slavs. German and Austro-Hungarians (other than Slavs) were comparatively few.

7. The deportation was carried out under the sheriff of Cochise county. It was formally decided upon at a meeting of citizens on the night of July 11, participated in by the managers and other officials of the Copper Queen Consolidated Mining Company (Phelps-Dodge Corporation, Copper Queen Division), and the Calumet and Arizona Mining Company. Those who planned and directed the deportation purposely abstained from consulting about their plans either with the United States Attorney in Arizona, or the law officers of the State or county, or their own legal advisers.

8. In order to carry the plans for the deportation into successful execution, the leaders in the enterprise utilized the local offices of the Bell Telephone Company, and exercised, or attempted to exercise, a censorship over parts of interstate connections of both the telephone and telegraph lines in order to prevent any knowledge of the deportations reaching the outside world.

9. The plan for the deportation and its execution are attributable to the belief, in the minds of those who engineered it, that violence was contemplated by the strikers and sympathizers with the strikers who had come into the district from without; that life and property would be insecure unless such deportation was undertaken, and that the State was without the necessary armed force to prevent such anticipated violence and to safeguard life and property within the district. This belief has no justification in the evidence in support of it presented by the parties who harbored it.

10. Neither such fear on the part of the leaders of the deportation as to anticipated violence nor evidence justifying such fear was ever communicated to the Governor of the State of Arizona with a view to renewing the request for Federal troops, based upon changing conditions, nor were the Federal authorities, in fact, ever apprised that a change of conditions had taken place in the district from that found by the investigating army officer to call for or warrant the interposition of Federal troops.

11. The deportation was wholly illegal and without authority in law either State or Federal.

12. Following the deportation of the 12th, in the language of Governor Campbell of Arizona, "the constitutional rights of citizens and others have been ignored by processes not provided by law, viz., by deputy sheriffs

who refused persons admittance into the district, and the passing of judgment by a tribunal without legal jurisdiction resulting in further deportations."

13. Immediately after the first deportation, and until late in August, the function of the local judiciary was usurped by a body which, to all intents and purposes, was a vigilance committee having no authority whatever in law. It caused the deportation of large numbers of others. So far as this committee is concerned, its activities were abandoned at the request of the Governor of Arizona late in August.

14. Among those who were deported from the district, and who thereafter were arrested in seeking entrance into it, were several who were registered under the selective draft law, and sought to return or remain in the district in order to discharge their legal duty of reporting for physical examination under the draft.

These findings of facts make certain recommendations by the President's Mediation Commission inevitable:

1. All illegal practices and the denial of rights safeguarded by the constitution and statutes must at once cease. The right of unimpeded admittance into the Warren District of all who seek entrance into it in a lawful and peaceable manner must be respected. The right of all persons freely to move about in the Warren district or to continue to reside within it must be scrupulously observed except in so far as such right is restricted by the orderly process of the law. To this end we have directed letters to Governor Campbell and Sheriff Wheeler, of Cochise county, of which copies, together with Sheriff Wheeler's acknowledgment, are herewith appended. (Appendix A.)

2. In so far as the deportation of July 12, and the events following constitute violations of the laws of Arizona, we join in the recommendation of Governor Campbell that the responsible law officers of the State and county pursue appropriate remedies for the vindication of such laws.

3. In so far as the evidence before the Commission indicates interference with the enforcement of the selective draft law, the facts should be brought to the attention of the Attorney General of the United States. A memorandum for submission to the Attorney General is herewith appended. (Appendix B.)

4. In so far as the evidence before the Commission indicates an interference with interstate lines of communication, the facts should be submitted for appropriate attention by the Interstate Commerce Commission. A memorandum for submission to the Interstate Commerce Commission is herewith appended. (Appendix C.)

5. In so far as deportations such as we have set forth have not yet been made a Federal offense, it is our duty to report to the President the wisdom of recommending to the Congress that such occurrences here-



after be made criminal under the Federal law to the full extent of the constitutional authority of the Federal Government.

The Mediation Commission is composed of: W. B. Wilson, Chairman; J. L. Spangler, E. P. Marsh, J. H. Walker, and Felix Frankfurter.

### **STATE EXPLOSIVES INSPECTORS APPOINTED TO ENFORCE NEW LAW**

State inspectors to enforce the provisions of the explosives act have been appointed as follows:

Edward L. Shaw, Phoenix Ariz.; D. C. Sargent, Cordova, Alaska; Edwin T. Reaves, Little Rock, Ark.; Walter K. McAdory, Birmingham, Ala.; John M. Griffin, Madera, Cal.; Thomas S. Price, Longmont, Colo.; James F. McGann, New Haven, Conn.; Clarence E. Woods, Eustis, Fla.; Charles H. Mason, Atlanta, Ga.; Lemuel T. Osborn, Mount Vernon, Ind.; John J. Hughes, Council Bluffs, Iowa; Edgar S. Elder, St. Maries, Idaho; William A. Compton, McComb, Ill.; Thomas S. Rhea, Russellville, Ky.; Isaac A. Broussard, Breau, La.; Madison C. Bowler, Minneapolis, Minn.; Daniel F. O'Connell, Fitchburg, Mass.; Ellis S. Middleton, Pochahontas, Miss.; Albert E. Stevenson, Port Huron, Mich.; Walter L. Lampkin, Kansas City, Mo.; Jeremiah W. Farrell, Joliet, Mont.; Leon O. Tebbets, Waterville, Me.; Edward D. Jackson, Buffalo, N. Y.; Nicholas Hughes, Paterson, N. J.; Andrew W. Bingham, Littleton, N. H.; William P. Porterfield, Fargo, N. Dak.; Charles F. Clark, David City, Neb.; Daniel A. McDonald, Carthage, N. C.; William N. Campbell, Medford, Oregon; Jasper S. Kinslow, Columbus, Ohio; Fred Rains, Muskogee, Okla.; John W. Rittenhouse, Scranton, Pa.; Francis E. Sullivan, Providence, R. I.; Charles B. Watters, San Antonio, Tex.; Albert M. Leach, Clarksville, Tenn.; David C. Dunbar, Salt Lake City, Utah; Park H. Pollard, Proctorsville, Vt.; Martin Williams, Pearisburg, Va.; Walter G. Ronald, Seattle, Wash.; E. M. Gilkerson, Parkersburg, W. Va.; James A. Berry, Basin, Wyoming; William Banks, Columbia, S. C.

### **INDEPENDENT OPERATORS AND MINERS REACH WAGE AGREEMENT**

An agreement between independent operators and mine workers in central Pennsylvania, was approved November 22 by United States Fuel Administrator Harry A. Garfield. The agreement affects an annual production of 6,000,000 tons of coal.

The agreement approved is based upon the so-called Washington agreement approved by the Fuel Administration. It includes the increases in wages and the penalty clause designed to keep the mines working at their maximum production.

## **REPLOGLE IS NAMED DIRECTOR OF STEEL**

**Vice-President of American Vanadium Company to be Responsible for Proper Execution of All Orders for Iron and Steel**

Under and subject to the Raw Materials Division of the War Industries Board of the Council of National Defense, J. L. Replogle, vice-president of the American Vanadium Company, has been appointed to act as Director of Steel Supply, and will have charge of the distribution and be responsible for the prompt and proper execution of all orders for iron and steel, other than ordnance, for the United States and allied governments.

Mr. Replogle is receiving weekly reports from the iron and steel producers showing the tonnage of iron and steel of the various classification on order for the United States and allied governments as well as domestic and foreign orders for general purposes. He also is keeping informed as to mill capacities and mill productions, and, in cases of retarded output, secure reasons therefor and in conjunction with the manufacturers, and the War Industries Board is making every proper effort to remove obstacles which prevent maximum output of war necessities.

Memorandum requisitions from the various departments of the United States Government are to be sent in triplicate to Mr. Replogle, who will, after proper consideration of all mill conditions as to getting maximum production with particular reference to priority status of the order books of the various manufacturers, determine as to the allocation of the orders and all necessary details, and retain one copy in the office of the War Industries Board, send one copy to the Washington office of the American Iron and Steel Institute, and return one copy, with information as to where the order should be placed and necessary details, to the department from which the order emanated. The department concerned will then place orders direct with the manufacturer in accordance with its particular order system.

Requisitions from the allied governments, after approval by the Allied Purchasing Commission, will be sent to the Director of Steel Supply for proper distribution.

Mr. Replogle announces that he will at all times work in close harmony with the various departments of the Government, which in turn will give him as much preliminary information as possible in order that material can be placed to the best advantage of all concerned, and with due consideration with respect to giving mills the best operating conditions to permit maximum output at minimum cost so far as the Government necessities will allow.

Mr. Replogle will have all necessary steel statistical records to which the authorized representatives of the various Government departments will have access.

## EASTERN ROADS POOL AVAILABLE FACILITIES

### Lines in Congested District to be Operated as a Unit—"Reasonable" Pooling of Coal Recommended

The Railroads' War Board, November 24, adopted revolutionary measures in order to relieve the congestion of traffic on the eastern railways. It directed "that all available facilities on all railroads east of Chicago be pooled to the extent necessary to furnish maximum freight movement." The effect will be that to the full extent that conditions render it desirable these railways will be operated as a unit, entirely regardless of their ownership and individual interests. The operating vice-presidents of the eastern lines have been appointed a committee to operate as a unit all the lines involved, and have been given instructions and authority to adopt all measures which, in their judgment, may be necessary to relieve the present situation and assure the maximum amount of transportation.

The Railroads' War Board has been studying with concern the increasing congestion on the eastern lines. It has recognized the fact that the roads in that territory have been becoming overburdened in consequence of the growing industrial activity of the condition of the labor market, and of other conditions. As a part of the program for relieving these conditions, it has addressed a letter to the Government Fuel Administration in which it has made the following recommendations.

That a survey be made by the Fuel Administration of present contracts and methods of purchase and shipment of coal so as to shorten the rail haul from mine to consumer, and to eliminate, as far as possible, all cross hauls of coal.

"Pooling of coal within reasonable limits," the War Board said, "will, without doubt, produce additional large savings, and the railroads are prepared to cooperate in any measures pursued by the Fuel Administration to that end."

That immediate measures be adopted to transfer movement of foodstuffs, and other export material, to southern and gulf ports to as large a degree as compatible with public interest, in order to relieve the eastern congested territory of an equivalent amount of train service.

That immediate survey be made of all Government requirements now involving the movement of raw materials in and manufactured product out of centers of industry, so that accumulations on cars and lines, and in terminals, will not occur as now, while product is awaiting use here or ocean transportation for foreign use.

The concentration in certain parts of eastern territory of vast Government and indus-

trial activities has overtaxed the capacity of rail lines in that territory, considering the heavy movement of coal and other heavy commodities which formerly moved on coastwise vessels, but has now been thrown upon the railroads, the heavy military and civilian passenger travel, etc.

Further enterprise involving large operations in the use of coal and other heavy commodities should not be established in that territory, except after full consideration of these conditions.

An important part of the plan adopted for the operation of the eastern lines is that of placing at their disposal the facilities of railways in other territories to such extent as may be necessary.

It is a generally recognized fact that the situation on the eastern lines is more critical than in any other part of the country, because upon them is being concentrated the bulk of the fuel and raw materials being used in the manufacture of munitions, and also the vast quantities of supplies and foodstuffs which are being transported to Europe. Therefore, locomotives, employees and machine tools will be transferred from other railways to the eastern lines, and the repair shops of other lines, such as those of the western roads in Chicago, will be utilized for making repairs on the equipment of the eastern lines.

The measures adopted are the result of a series of conferences with Government authorities and officers of the eastern lines which the Railroads' War Board initiated Monday. The vice-presidents of the eastern railways were called to Washington and received from the War Board their instructions for immediate action. A meeting was held which was attended by Dr. H. A. Garfield, the Government Fuel Administrator; E. H. Hurley, chairman of the United States Shipping Board; Robert S. Lovett, the Government Priority Director, and Commissioner Edgar E. Clark, of the Interstate Commerce Commission, and the Railroads' War Board. At this conference the situation was fully discussed with the representatives of the Government, who concurred in the importance of adopting the drastic measures decided upon.

The measures the Railroads' War Board and the Committee of Operating Vice-Presidents will put into effect at once are as follows:

All available facilities on all railroads east of Chicago will be pooled to the extent necessary to furnish maximum freight movement.

All open-top cars of all eastern roads, and similar cars of private ownership which are at home on eastern lines, will be pooled on an equitable plan, distribution under the pool to be made pro rata on the basis of the tonnage carrying capacity of the equipment in the pool. The car pool should be administered under the direction of the Car Service Commission.

The Commission on Car Service will divert from those lines where the congestion is most



acute, all freight that can be handled by any open route until the congestion is relieved.

The pooling of coal will be further extended wherever practicable.

The National Fuel Administration is asked to arrange for supplying the various coal markets from the nearest coal mines in order to avoid waste of car efficiency.

Any order that preference be given to any class of cars or freight results in a slowing down of the operation of the transportation machine. A constant flow of all traffic concurrently produces the best transportation results. The War Board, therefore, emphasizes the desirability of reducing the great volume of preference orders which, by placing a substantial majority of the freight moved on the same plane, defeats its own object.

The eastern railways are in serious need of more men, and special measures may be necessary to provide them. Some specific illustrations of the way in which the trackage of the various lines is to be pooled are to be given in the report of the vice-presidents. For example, the Western Maryland will allow its line to be used as an east bound track in connection with the Baltimore & Ohio, from Connellsville, Pa., to Jerome, Md., 125 miles, thus making three tracks between those points. The Erie Railroad is to be used to its full capacity in transporting lake ore and coal between Cleveland and Youngstown, and power and equipment will be provided from other lines for its use, as required. It is anticipated that under the new arrangement large amounts of freight traffic will be diverted from the railroads which are now most congested to those which still have some unused capacity.

Discuss Price of Powder

Representatives of operators and miners from the Ohio coal fields, at the request of Homer Johnson, state fuel administrator for Ohio, met last month with H. D. Nims, of the production and price division of the United States Fuel Administration, to discuss the price of powder in that field.

The operators, claiming that they now pay powder manufacturers \$2.05 per keg, have proposed a price to the miners of \$2.50 per keg, which price now prevails in the Pennsylvania fields. The miners are requesting that the operators continue the price of about \$1.75, for which powder is sold in Indiana and Illinois. Both sides will be given a careful hearing, as the price of powder affects the whole question of increased coal production.

The Ohio operators were represented by the following: J. M. Roan, Columbus, Ohio; J. H. Prichard, Columbus, Ohio, and W. H. Haskins, of Coshocton, Ohio. The miners' representatives were the following officers of the United Mine Workers of America, District No. 6: John Moore, president; Lee Hall, vice-president, and G. W. Savage, secretary and treasurer.

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Detroit Situation Improves

Gradual improvement in the transportation difficulties involving coal shipments to Detroit, Mich., and other points in the northern middle west are being reported to the United States Fuel Administration.

## BURNS SHOWING WEST VALUE OF COOPERATION

**Western Secretary of Mining Congress Doing  
Much to Make Possible United Action on  
Part of the Industry**

John T. Burns, who has undertaken to organize the mining interests of the west solidly in the ranks of the American Mining Congress, is an experienced organizer of men, and is in the work because he loves it. He began his business career as a newsboy, picking up schooling as best he could until at 20 years of age he was the city editor of the Kalamazoo Telegraph, and developed the trick of handling men and affairs to the extent that when he entered metropolitan newspaper life as a member of the staff of the Detroit Journal he remained with that newspaper nearly fourteen years. The lure of the west took Mr. Burns to Colorado fourteen years ago, where, as a newspaper man, he studied commercial conditions, finally becoming the secretary of the Colorado State Commercial Association, the first and most successful commercial organization ever attempted in that state.

In 1907 Mr. Burns, having been very active in exploiting the possibilities of agricultural development of the "Great Plains," where millions of acres lay untouched by the plow, was selected by Governor McDonald of Colorado as a member of the organizing board for the first Trans-Missouri Dry Farming Congress, and later became the secretary of the Congress, continuing to devote his life to the dry farming movement until practically every Federal agricultural department in the world had organized a special department for dry farming and every western state was actively cooperating with the International Dry Farming Congress and local organizations of farmers in testing out and putting into practice the methods by which the subhumid territory could be made commercially productive. Mr. Burns finally retired to private business in Denver, but a few weeks ago, when Secretary Callbreath, of The American Mining Congress, placed squarely before him the great need of putting the mining fraternity upon a better basis through thorough organization and asked him to enlist for the work. Private business affairs were placed aside, and Mr. Burns, with a very complete knowledge of the western states and their resources at his command, is now in the field, discussing with the metal mine operators, the coal men and the oil producers the economic and political aspects of the enlarged plan of the Congress.

Temporarily the western headquarters are with Mr. D. W. Brunton, 730 Symes Building, Denver. Mr. Brunton, once president of the Mining Congress, is actively back of a movement for the organization of a Colorado chapter.



JOHN T. BURNS  
Western Secretary

## GARFIELD WARNS CANADA TO CONSERVE ITS COAL SUPPLY

Canada must place herself upon the same basis as the United States with reference to the conservation of coal. This has been made plain to the Dominion government by the United States Fuel Administration. In an official communication to the Canadian Fuel Controller, the Fuel Administration pointed out that Canada would be expected to resort to the same measures to save coal as are being adopted in the United States.

In the communication to the Canadian authorities the Fuel Administration calls attention to the fact that an intensive campaign is being carried on in this country for fuel economy. It is suggested that Canada conduct a similar campaign for the limitation of the uses of coal, and the cooperation of the United States Government in such a campaign is offered.

Most of the Canadian coal supply is derived from the United States, and the Fuel Administration has undertaken to give Canada a pro rata share of the United States' supply on the same basis as the various States of the Union. The Fuel Administration, however, demands that Canada safeguard this supply by conservation measures in line with those undertaken in the United States.



## THE AMERICAN MINING CONGRESS AND THE SOUTH

Much gratification is being expressed by leaders of the American Mining Congress in various sections of the country at the splendid response which prominent Southern operators are giving to the comprehensive campaign of the organization looking toward the greater development of the mineral resources of the section.

In the iron, steel and coal center of Birmingham, William M. Conrad, assistant secretary of the Congress, who has been in charge of the campaign, received the cooperation of practically every large operator, all expressing their confidence in the big work the organization is doing for the advancement of mining throughout the country and particularly to awaken additional interest in the industry in the Southland.

Men of the high stamp in the mining industry of Alabama and the nation as C. T. Fairbairn, general manager of Republic Steel and Iron Company; J. C. Maben, Jr., of Sloss-Sheffield Steel and Iron Company; Morris Bush, of Imperial Coal and Coke Company; Charles F. De Bardeleben, of Alabama Fuel and Iron Company, and J. B. McClary, of Yolande Coal and Coke Company, were among the first in Birmingham to tender their occupation to the movement in hand.

These were followed by such other representative men of the industry in Alabama as G. W. Connors, of Eureka Coal Company and Connors-Weyman Steel Company; J. W. McQueen, of Sloss-Sheffield Steel and Iron Company; H. T. De Bardeleben Coal Company; David Roberts, Brilliant Coal Company; Harry W. Coffin, the Alabama Company; L. M. Adler, Corona Coal Company; Walter Moore, Empire Coal Company; W. S. Lovell, Montevallo Mining Company; Munro B. Lanier, Munro-Warrior Coal Company, and B. F. Roden, Roden Coal Company.

In the steadily progressing city of Chattanooga, where much of the capital invested in Tennessee mining is located, the most representative men of the industry have given their cooperation, the list including C. E. Buek, of Chattanooga Iron Company; J. H. Jones, Durham Coal and Iron Company; Morrow Chamberlain, Roane Iron Company; J. E. Patton, Sewanee Fuel and Iron Company; S. M. Riddle, Riddle Coal Company; J. R. Barnes, Barnes Coal Company; O. B. Jones, mining engineer; H. B. Bonney, H. B. Bonney Coal Company, and H. L. Cory, H. L. Cory Coal Company.

Already deep interest is being manifested in Tennessee in a movement for a state chapter, which is being fostered by Dr. A. H. Purdue, state geologist, and which has as chairman of its committee on organization Jesse W. Overton, president of both Suwanee Iron Company and Alabama Fuel and Iron Company, and a resident of Nashville.

Another of the leading Nashville operators who has also taken a deep interest in the work

of the Congress recently is William H. Lindsay, vice-president of the Napier Iron Works and one of the heads of the Crescent Coal Company. Mr. Lindsay points out that it is to the interest of all operators in the various sections to ally with such a strong organization as the Congress, thereby increasing its strength and general influence for the advancement of mining.

Guy Darst, of the Bewley-Darst Coal Company, of Knoxville, is one of the leading men of his section who has come into the movement within the past month. D. C. Campbell, of Campbell Coal Company, of the same city, also is a believer in the work of the Congress, and has added his cooperation to the program in hand.

Problems are daily arising in the west Kentucky coal fields which can be solved by the aid of the American Mining Congress, and at the same time the operators of the section can be participating in a great national movement for the benefit of their industry, is the belief of General Manager F. P. Wright, of the Crescent Coal Company, at Bevier, Ky., and others of the section have also acquiesced.

H. L. Tucker, of the Rockport Coal Company, of Rockport, Ky., and prominent in the work of the West Kentucky Operators' Association and West Kentucky Conservation Association, is one of the leaders in the section to come into the Congress within the past few weeks. Mr. Tucker firmly believes in the splendid impetus being given to the advancement of mining throughout the country by the Congress, and by reason of his experience and knowledge of the power of cooperation as secured in varied organization for the advancement of the industry, it is pointed out, that his opinion is of paramount importance to operators generally, and especially in the Southern section.

Other men prominent in the west Kentucky field and anxious to extend the field of national cooperation of leaders of the mining industry who have recently come into the Congress include Alexander Blair, Sr., of the Pittsburgh Coal Company, of Baskett, Ky., who had been preceded by his son, Alexander Blair, Jr., one of the enthusiastic supporters of the national movement.

J. A. Smith, vice-president of Gibraltar Coal Mining Company, with headquarters at Central City, Ky., has also recently affiliated with the Congress, as has F. V. Ruckman, of the Highland Mining Company, of Providence, Ky., and one of the leading figures in the west Kentucky field.

### To Aid in Conserving Fuel

Plans for enlisting the services of the children of the country in the campaign to save coal are being worked out by the Conservation Division of the Federal Fuel Administration. Boy Scouts, and school children generally are in a position to aid in the coal conservation campaign, by making use of waste products which can be utilized as fuel.

**GOVERNMENT EXPERTS WELL  
KNOWN TO MINING MEN**



*Harris & Ewing*

ARTHUR E. WELLS

Arthur E. Wells, the metallurgist in charge of the Salt Lake City Station of the U. S. Bureau of Mines, was born in Framingham, Mass., July 27, 1884. Other biographical data regarding Mr. Wells is as follows:

Graduated from Massachusetts Institute of Technology, 1906.

From June, 1906, to August, 1913, with American Smelting and Refining Company.

From June, 1906, to October, 1908, Chemist, Globe Plant, Denver, Colo. Arkansas Valley Plant, Leadville, Colo. Murray Plant, Murray, Utah.

October, 1908, to May, 1910, in charge smoke investigations at Garfield Smelter, Garfield, Utah.

May, 1910, to May, 1911, Assistant Metallurgist; May, 1911, to August, 1913, Metallurgist, Garfield Smelter, Garfield, Utah.

August, 1913, to November, 1914, Metallurgist in charge of investigations, Selby Smelter Commission, California.

November, 1914, to July 1, 1917, Metallurgist on smelter smoke problem, U. S. Bureau of Mines.

July 1, 1916, to date. Superintendent of Experiment Station, Salt Lake City, Utah, Bureau of Mines.

**ARIZONA COPPER MINES  
NOW SAFE FROM STRIKES**

**This Is the Belief of the President's Mediation Commission After Lengthy Study of Labor Conditions.**

On November 7 the President received the following telegram from his Labor Commission, which had been sitting in Arizona:

"The President's Mediation Commission found very different conditions in the Warren copper district from those that prevailed in the other camps it visited. This district contains the great mines and smelters of the Copper Queen and the Calumet and Arizona, with a normal output of about 17,000,000 pounds.

"So far as the immediate output of copper goes, the commission found the situation satisfactory. The strikes in the Globe-Miami and the Clifton-Morenci-Metcalf districts have resulted in a substantial shutdown of the mines. Federal intervention was needed to secure resumption. Here the strike, called on June 26, which to an increasing measure affected the production in the district, was broken by the Bisbee deportations of 1,186 men on July 12.

"The task, therefore, which confronted the President's Mediation Commission was not to secure operations, but to assure their continuance during the period of the war. Here, as in the other camps, the strike came to a head because there was no machinery by which grievances of the employees could find adjustment through an orderly process of adjudication before some final disinterested tribunal in whose fairness both sides would have confidence and before whom each side would have equal weight.

"The commission has directed a plan of settlement, accepted by the companies, which provides for the establishment of grievance committees in each mine entirely selected by the men, by and before whom all grievances must in the first instance be presented. In case redress be needed and denied, the grievance committee may appeal to the United States administrator appointed for the purpose of supervising the operations of the commission's settlement in the entire district.

"Claims of discrimination against union members have been particularly insistent in this district. Such discriminations are hereafter prohibited, and the enforcement of the prohibition is vested in the United States administrator. There is thus assured the effective means by which all questions in dispute between the companies and the men can be promptly and justly settled under the impartial supervision of Federal authority. Resort to the strike, at least for the period of the war, is therefore unnecessary and abandoned by the men. There is thus every basis for assurance that the copper production of



this district will continue without interruption because of labor difficulties.

"The President's commission could not make provisions for the future copper production without inquiring into the Bisbee deportations of July 12 and the events that preceded and followed them. The result of such inquiry will shortly be embodied in a report to President Wilson as to findings of facts and recommendations thereon.

"The commission is now proceeding to San Francisco."

The commission consists of William B. Wilson, Secretary of Labor; Col. J. L. Spangler, of Pennsylvania; Verner Z. Reed, of Colorado; John H. Walker, of Illinois, and E. P. Marsh, of Washington. Felix Frankfurter, of New York, is acting as secretary of the commission.

### Lead From Mexico

The following letter has been received from a member of the Mining Congress:

"I wish to point out to you the utter failure of the Government to play fair with the lead and zinc industry. While the prices for steel, copper, coal, iron, wheat, and other commodities, have been fixed and the industry thereby given to know where they stand, yet the treatment of the zinc and lead trade has simply been scandalous. The authorized spokesmen for the Government have announced that prices would be fixed for these commodities, but they have not been fixed. In consequence chaos has reigned in the trade, with the result that the bottom has dropped out of the market. This will really benefit no one, as dealers and consumers are even now fearful to buy at the ridiculously low prices recently fixed by the trust.

"I am further informed that a smelting and refining company, together with the German owned companies of Mexico, has, through some mysterious arrangement with the Treasury Department, been permitted to ship in low-grade lead bullion in large quantities from Mexico, under the plea to help the Treasury Department to get cheaper supplies of silver.

"The real consequence of this has been to permit the trust to get in large quantities of lead bullion free of duty. It has enabled the company to reduce the price of lead \$110 per ton within the past sixty days.

"As you are aware, some interests have long desired to find a loophole by which the Mexican lead could be admitted."

EDITOR'S NOTE.—The Treasury Department denies vigorously that any lead is being admitted to this country from Mexico without the payment of duty.

### Iowa Scale Arranged

The miners and operators of Iowa have agreed on a scale governing the advance in wages along the lines of the Washington settlement. They also strengthened their penalty clause.

## WYOMING OIL MEN

### ORGANIZE STATE CHAPTER

**By Acting as a Unit, They Expect to Do Much to Encourage Legitimate Development in Their State.**

While Wyoming has long contained many valuable mining properties, both metalliferous and coal, it has remained for the oil men of that busy western state to open the way for the organization of a chapter of the American Mining Congress. An invitation was recently extended to Western Secretary Burns to investigate the possibilities of getting the oil men together upon a cooperative basis for protective purposes and for the further purpose of carrying on united action in behalf of legitimate promotions in the oil fields and eventually establishing some method of discouraging dishonest exploitation.

Mr. Burns has already covered the northern oil districts, and has returned filled with enthusiasm over the marvelous development already recorded and the outlook for still greater results when actual development is begun in several partially tested fields. A liberal membership was subscribed as the nucleus of an "oil section" of the Congress, and now, at the suggestion of a number of interested members, Mr. Burns will complete a tour of Wyoming to secure enough additional membership subscriptions to make a chapter for Wyoming a reality at an early date.

There will probably be two local sections for oil men alone—one to be known as the Casper District, and the other to comprise the members from Cheyenne west to Rawlins. All mining operators will be asked to assemble at an early date to formally organize a chapter for the state, and Casper men say that that hustling city will offer to maintain the state headquarters in the heart of the now famous oil field.

### Coal for Dupont Company Assured

Direct orders to insure an adequate supply of coal to the various plants of the DuPont Powder Company have been issued by the United States Fuel Administration. Mines supplying the DuPont plants were instructed to deliver their full quota of the munition plant's demands.

The mine operators were reminded that order of the Fuel Administration of this character are obligatory and must be filled.

The DuPont plants are turning out vast quantities of powder and other explosives for the use of the Government.

E. L. Carpenter, formerly of Salt Lake City, Utah, now of New York City, was in Washington in November.

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## TANK SHIPS NEEDED FOR TRANSATLANTIC TRADE

### Imports of Mexican Petroleum May be Decreased so That Ships Can be Used in European Service

Tank vessels engaged in bringing oil from Tampico and Tuxpam to Baton Rouge and to other points in the United States are needed so badly for transatlantic service that a number of them probably will be withdrawn in the near future. From present indications the United States will be able to produce all the petroleum products for which she will be called upon by her allies and for domestic uses. It is believed here it will be easier to procure production than it will be to transport petroleum products to Europe. For this reason a careful survey of tank shipping is being conducted so as to place all tankers that can be spared in the transatlantic service.

Calculations of the refiners are understood to call for imports of 400,000 tons of crude petroleum from Mexico during the coming year. It is believed this amount can be reduced by more than one-half. The difference can be supplied domestically, it is believed, without inflicting hardships, and in this way a number of tank steamers can be released. These steamers vary from 2,000 to 17,000 tons' capacity.

Tank ships at present are engaged in carrying crude petroleum from Tampico and Tuxpam to the following American ports: New Orleans, Galveston, Port Aransas, Port Arthur, Sabine, Texas City, Tampa, Key West, Jacksonville, Philadelphia, Baltimore, Norfolk, Newark, Perth Amboy, New York, Providence and Portland, Me.

Some oil men are of the opinion that it would be feasible to use ships only in transporting Mexican petroleum between Tampico and Tuxpam and Galveston. Galveston is less than 500 miles from Tampico. By using only this short route the release of many ships will be possible. The oil then would be distributed in Galveston by rail or by barge.

A pipe line from the Tampico field to Brownsville or some other point in Texas also has been proposed, but the length of time which would be required to carry out such a project militates against its serious consideration.

Oil operators will be notified definitely when imports of asphalt and bitumen will have been suspended. It is believed that ships engaged in this trade soon will be withdrawn entirely. Asphalt is imported from Venezuela and Trinidad. This involves a voyage of more than 2,000 miles and ties up a number of ships. The imported asphalt is considered superior to the asphaltic materials manufactured in this country from crude petroleum, but since the domestic product serves all purposes fairly well, and probably will be adequate for the country's needs, no good reason is seen for continuing the use of ships to transport asphalt more than 2,000 miles.

### Conservation of Electric Power Urged

Fuel saving through the conservation of electric power used by electric railway companies is sought in a communication which the United States Fuel Administration has transmitted to the Fuel Administrators of the various States. The State Administrators are urged to secure the cooperation of the electric public utility concerns to eliminate all wasteful uses of electricity.

### Hoover to Control Arsenic

With the idea of further conserving the nation's food supply by protecting it from insect ravages, President Wilson, in a proclamation dated November 15, placed the arsenic industry of the United States under direction of the Food Administration.



# OIL LANDS OF ALASKA

By FALCON JOSLIN

Seven years ago this month all the oil lands in Alaska were withdrawn from sale by an order signed by the President of the United States. This order ended oil development in the territory. Previous to that time the oil lands were subject to location and entry under the placer mining laws in the same manner which has prevailed in the western states for many years. This law is, perhaps, not perfect, but is a good law, and has worked well. Splendid oil development has taken place under its provisions in California and Wyoming, and no monopoly has ever arisen under it.

There are two known oil-bearing areas in Alaska, namely, those adjacent to Comptroller Bay and embracing Katalla, Nichiwak, and the Yakataga district, and the other on Cook's Inlet, lying about 300 miles west of the Comptroller Bay field. Oil seepages have also been reported on the Arctic coast and other unexplored districts in the interior of Alaska, but practically nothing is known of the oil lands of the territory except in the two fields above mentioned. These two fields are on the south coast, both adjacent to open harbors and both are quite extensive. The Comptroller Bay fields show seepages at intervals along the coast for over 100 miles. In the Cook's Inlet fields the seepages indicate that the oil field may extend for over 200 miles along the coast. The oil is similar in both fields, and is a very high grade paraffine base oil, ranging from 39 to 47-B gravity.

Previous to the withdrawal order there had been a number of oil locations in the Comptroller Bay field, covering in the aggregate probably 25,000 acres. One single claim of 151 acres had been patented. Fifteen or twenty wells had been drilled by different parties on different claims. Oil was being produced in small but paying quantities on the patented claims. A large amount of preliminary work had been done, such as surveying, building roads, sawmills, docks, warehouses, boarding houses, etc. In all, more than \$1,000,000 had been spent in such preliminary work in that field. A few locations had been made in the Cook's Inlet field, and three or four wells had been drilled there, some of which found oil in paying quantities.

Since the withdrawal order there have been no new locations whatever, and a large number of the existing locations have been abandoned. In the Katalla district many of the buildings and bridges have rotted and fallen down and the roads have grown up with briars and bushes. A few of the oil locators have, however, held on, doing annual assessment work and waiting for the time when the law might be restored and titles be secured.

While its oil fields have been thus locked up, the demand for petroleum products in Alaska has been growing steadily. In 1916 petroleum products were imported into the territory as follows:

|                       | <i>Barrels.</i> |
|-----------------------|-----------------|
| Fuel oil.....         | 560,000         |
| Gasoline, etc.....    | 67,700          |
| Illuminating oil..... | 17,400          |
| Lubricating oil.....  | 8,800           |
| Total .....           | 653,900         |

This was all brought from California, and was transported from 2,000 to 5,000 miles. The invoice value of the products was \$1,277,319. The cost of transportation is not known exactly, but would probably exceed the original cost of the oil. The cost to the people of the territory, therefore, was probably over \$2,500,000.

It is reasonably certain that if the oil lands had not been withdrawn the needs of the territory would long since have been supplied from its own fields. Indeed, it is entirely probable that a great oil industry would have been established before this and Alaska now be exporting instead of importing oil.

Within the past year some new interest has been taken in the development of the Comptroller Bay fields. At least one company has been organized and begun drilling operations in an endeavor to perfect titles to some of the oil locations made before the withdrawal order. The great uncertainty, however, of securing titles to the claims even if oil in commercial quantities shall be discovered makes it difficult to find sufficient capital to carry on development work except in a small way.

While the oil lands in Alaska have been thus withdrawn, great oil fields have been developed in California, Oklahoma, Wyoming, Mexico and South America upon indications no more promising than the Alaskan fields show. Even in China oil development is being carried on by American capital and enterprise. The drilling crews on their way to China pass almost in sight of the Alaskan fields.

It would seem that an order which has produced such ruinous results should only have been issued for the strongest reasons; that an order affecting so vitally the prosperity and the welfare of a whole territory should not have been issued except after thorough consideration and full hearing by the people to be affected by it. But the order was issued without any notice and without any hearing whatever. It came upon the oil industry in Alaska like a bolt of lightning from a clear sky.



Harris &amp; Ewing

FALCON JOSLIN

The order is here given in full:

"WITHDRAWAL ORDER OF NOVEMBER 3, 1910  
 "(Petroleum Reserve No. 12—Alaska No. 1)  
 "November 3, 1910.

"It is hereby ordered that all the public lands and lands in national forests in the district of Alaska containing petroleum deposits be, and the same are hereby, withdrawn from settlement, location, sale, or entry, and reserved for classification and in aid of legislation affecting the use and disposal of petroleum lands belonging to the United States.

"WILLIAM H. TAFT,  
 "President.

"Referred to the Commissioner of the General Land Office for appropriate action.

"H. A. BALLINGER,  
 "Secretary."

The language of the act of Congress authorizing the President to make such orders is as follows:

"The President may at any time, in his discretion, temporarily withdraw from settlement, location, sale, or entry any of the public lands of the United States, including the district of Alaska, and reserve the same for water-power sites, irrigation, classification of lands, or other public purposes to be specified in the orders of withdrawal, and such withdrawals or reservations shall remain in force until revoked by him or by an act of Congress."

The first thing that strikes one about the order is that it withdraws all the oil lands in

the territory instead of any specific area. Withdrawals in the western states have always followed the authority of the act and specified particular areas, describing them by sections and townships. Such order leaves all other lands open for exploration, and therefore does not nullify the law. Moreover, in the western states very large portions of the areas of the states were long ago reduced to private ownership, and, of course, could not be affected by any withdrawal order. In Alaska, however, practically the whole area of the territory still belongs to the Government, and when it was all withdrawn it completely nullified the law on the subject of oil lands in the territory. The effect, therefore, of the withdrawal order in Alaska has been far more destructive than any or all withdrawal orders together have been in the western states.

When the ruinous character of this withdrawal order was described by the Delegate from Alaska to a committee of the United State Senate recently, a distinguished Senator exclaimed that such an order was a crime. The Senator, however, was not familiar with other features of the order.

The act says that such orders were to be temporary, yet it has been in effect more than seven years. The order says that it was issued for the purpose of classifying the land, but there has been no classification of the land nor any move whatever made toward doing so. The order says that it was issued in "aid of legislation," but Congress, which is the legislative body, had neither requested nor authorized such aid. The people of Alaska, who were most vitally affected, had never petitioned for new legislation upon the subject.

The act of Congress authorizing the President to make withdrawals of land nowhere authorizes withdrawals to aid legislation. The Constitution gives the President the right to recommend legislation to Congress. It also gives him the right to veto proposed legislation. But it does not anywhere authorize the President to suspend or abrogate the laws to aid legislation or for any other purpose. On the contrary, it expressly enjoins the President to only to see that the laws be faithfully executed.

The truth is, the executive department of the Government had reached the conclusion that the existing law for the sale of oil lands was wrong in principle; it felt that such lands should be leased instead of sold. Instead of trying to bring about the change by the usual method of recommendation, the Executive issued the order abrogating the existing law. It was intended not so much to aid, but to coerce Congress to pass a new law.

It has been said of the Alaskan withdrawal order that insofar as it purported to be temporary, it was insincere; insofar as it purported to withdraw the land for classification, it was untrue, and insofar as it purported to withdraw the lands to aid legislation, it was a usurpation of power, the consequence of which was the oppression of a great territory.

If such an order was a crime, every day it



remains in effect it continues a crime. If Congress had desired to take notice of the "aid to legislation" offered with such audacity, it should have passed the new legislation at the session following the date of the order, but many sessions have elapsed without action. The proposed legislation has been considered for years, but Congress apparently does not agree with the executive department that the law should be changed.

If Congress shall continue in this mind, apparently we shall never have any law for the opening of the oil lands unless the Executive should conclude to revoke the withdrawal order or Congress decide to repeal it. It does not seem likely that Congress will ever repeal an order it did not authorize.

The war conditions, with the scarcity and high cost of shipping and the severe shortage of oil in California, have brought about acute conditions in Alaska. Many of its industries are threatened with ruin for lack of oil.

At least twenty different bills for leasing oil and coal lands have been introduced in Congress within the last ten years. Several times leasing bills have passed the House, but no oil leasing bill has ever become a law.

A coal leasing bill for Alaska was forced through Congress in 1914, against the vigorous protest of the delegate from Alaska, but it does not work. No coal mines have yet been opened under it.

It may be well to mention that all the coal lands in Alaska had been withdrawn for eight years before the leasing bill was passed.

Now a proper lease-hold is just as good as a fee simple title. In many respects it is better, but it is not so good a title upon which to find capital for a new enterprise in a new country.

Most of the so-called leasing contained so many conditions for which the lease could be cancelled that they were not leases at all, but only a kind of license, or permit, revocable practically at the will of the lessor. Such a contract gives no title at all no matter what it may be called. This is the chief reason why the Alaska coal leasing law does not work.

The last form of leasing bill is S. 2812, recently reported for passage by the Senate Committee on Public Lands.

Just as the withdrawal orders dealt more harshly with Alaska than with the Western States, so this bill discriminates not in favor of but against Alaska.

The oil features of the bill may be divided into two parts. One deals with oil claims already initiated before any withdrawal orders, or initiated on lands which were never withdrawn, and the other provides generally for leasing oil lands in the future on which no claims have ever been initiated.

As to claims already initiated, the bill is a curiosity.

If the claim was initiated on lands which were never withdrawn, the claimant may proceed with his development work and secure patent upon proving up the claim. There

are some such claims in Wyoming. The delegate from Alaska pleaded with the Committee that Alaska claimants who initiated their claims on lands open to appropriation at the time, but subsequently withdrawn, should be given the same rights. But the Committee ignored his request, and while granting the right to proceed to patent in Wyoming, refuses it in Alaska.

The bill proposes an entirely different rule for claimants initiated before any withdrawals, but upon which the claimants continued to work and after the withdrawal proved the claims to be valuable. There are a number of such claims in California. As to these claims it provides that the claimant must take a lease and pay the Government one-eighth of the gross output as royalty.

There is no difference in principle whatever between such claims and those mentioned in Wyoming, except that in California the claimants drilled wells and got oil in paying quantities, and in Wyoming they have not yet done so. In Wyoming they may have a patent, while in California they must take a lease and pay a big royalty. The California men are penalized for their success. The Government wants a part of their winnings and the bill takes it.

A still different rule is provided by the bill for Alaska claimants. They are required, like the California claimants, to take leases, and must pay the same royalty in spite of the remoteness of Alaska. But before a claimant in Alaska can have a lease he must have spent not less than \$1,000 on or for each claim before it was withdrawn.

Moreover, for fear that some Alaska claimants may succeed in proving their claims upon a discovery of a natural flow of oil, which is common in that country, the bill provides that the discovery must have been by a well. No such condition was ever before imposed and is not now imposed anywhere except in Alaska.

It will be noted that in Wyoming a claimant need not have spent anything except to start his work, and in case of success, he may have a patent, while in Alaska the claimant must have spent at least \$1,000 for each claim and then can only have a lease.

As to the general leasing features of the bill, they are too extensive to attempt to analyze them in this article. One very apparent defect, however, is the limit of 2,560 acres which may be leased. This area may be sufficient in developed territory such as Wyoming and California, but is entirely inadequate for Alaska. The royalty of one-eighth also is too much for a new and totally undeveloped territory.

The proposed lease is subject to cancellation for breach of any of its provisions or of rules and regulations to be made under the law. In this respect it is similar to the Alaska coal leasing law which has so far proved inoperative.

If this leasing bill shall pass in the form reported, it may give relief in California and

Wyoming, but it will probably bring none to Alaska.

If the ruler of Alaska had deliberately planned measures to hurt the territory and retard its development, they could have thought of none more effective than to prohibit the use of its fuel resources.

Yet that is exactly what the Government in Washington has done.

For more than twenty years the people of Alaska have tried in vain to get the right to use some of the coal and oil that are to be found there in such great abundance. The coal and the oil lands are still locked up, while the Territory must import from distant and foreign fields all the coal and oil it uses.

### ANNUAL MEETING OF MEMBERS

The annual meeting of members of the American Mining Congress, held at Hotel Astor, New York City, November 15, was fairly well attended, and the discussions were of unusual value. A condensed report follows of the proceedings of the meeting:

The report of the Nominating Committee was presented, as follows:

The secretary announced that a legal quorum of the members was present.

The report of the Nominating Committee was approved, and the secretary was instructed to cast the unanimous ballot of those present for the persons nominated for directors, and also the vote of the members represented by proxy.

This having been done, the president announced the election of the following directors:

To serve for three years—Walter Douglas, Carl Scholz, Samuel A. Taylor, Charles S. Keith and L. A. Friedman.

To serve for one year—John T. Barneson.

The financial report of the secretary was presented, as follows:

#### SECRETARY'S FINANCIAL REPORT

Nov. 1, 1916-Oct. 31, 1917

Cash on hand, Nov. 1, 1916..... \$1,403.03

#### Receipts

Life memberships..... \$1,200.00

Membership fees..... 3,525.00

Membership dues..... 4,790.00

Special contributions..... 9,770.00

Holmes Memorial..... 93.00

Receipts from Journal—

Advertising ....\$10,961.17

Subscriptions .. 827.50

11,788.67

Sale of 1916 proceedings.... 40.00

Sale of old books, papers, badges, etc..... 30.48

Interest on balance in

Munsey Trust Co..... 8.28

Refunds on advances for expenses ..... 63.90

Rebates and refunds..... 3.23

Smoker contribution..... 10.00

Total receipts..... 31,322.56

Total to be accounted for.....\$32,725.59

#### Disbursements

Secretary's salary (May, 1914-July, 1915)..... \$7,500.00

Secretary's traveling expenses ..... 734.85

Office assistants, including extra help..... 2,909.30

Office rent, Washington... 1,200.00

Telephone and telegraph... 212.11

Postage ..... 848.09

Printing, stationery, and

Office supplies..... 934.69

Express, freight, hauling,

etc. .... 72.43

Incidental expense, including audit of books, etc.. 47.60

Printing 1915 proceedings.. 332.60

Printing 1916 proceedings,

balance ..... 454.02

Editing proceedings..... 100.00

Hoover luncheon..... 12.40

Holmes memorial, balance. 623.40

Membership campaign, salaries and expenses..... 3,942.56

Expenses of Journal—

Editor's salary...\$1,289.00

Editor's expenses. 155.31

Printing and en-

graving ..... 4,663.58

Commission and

expenses securing

advertising

..... 3,680.34

9,788.23

Refunds of membership

paid twice..... 25.00

Total disbursements..... 29,737.28

Cash on hand Oct. 31, 1917..... \$2,988.31

In National Metropolitan Bank,

Washington ..... \$2,218.57

In Munsey Trust Co., Washington.. 215.82

Cash in office (deposited Munsey

Trust Co., Nov. 1)..... 553.92

Total ..... \$2,988.31

Expenses covered by—

Vouchers No. 127 to No. 260, Munsey Trust

Company.

Vouchers No. 556 to No. 803, National

Metropolitan Bank.

Respectfully submitted,

J. F. CALLBREATH,

Secretary.

HOWARD C. BECK

Certified Public Accountant

Washington, Nov. 12, 1916.

I hereby certify that I have examined the



books and accounts of the American Mining Congress, J. F. Callbreath, secretary, covering the period from November 1, 1916, to October 31, 1917, and find that the total transactions were as follows, all disbursements being evidenced by vouchers and cancelled checks:

Cash on hand, Nov. 1, 1916..... \$1,403.03  
Total receipts..... 31,322.56

Total to be accounted for.....\$32,725.59  
Disbursements ..... 29,737.28

Cash on hand, Oct. 31, 1917..... \$2,988.31  
Located as follows:

National Metropolitan Bank, Wash-  
ington ..... \$2,217.57  
Munsey Trust Co., Washington.... 215.82  
Cash in office, deposited in Munsey  
Trust Co., Nov. 1, 1917..... 553.92

Total ..... \$2,988.31  
As per bank pass-books and statements, less  
outstanding checks. The balance of the sec-  
retary's salary unpaid from August 1915, to  
October 31, 1917, is \$13,500.

Respectfully submitted,

HOWARD C. BECK,  
*Certified Public Accountant.*

Upon motion, it was unanimously ordered  
that the financial report of the secretary be  
approved.

The secretary then presented the financial  
statement of the receipts and expenses of the  
1916 convention, held at Chicago, Illinois, as  
follows:

FINANCIAL STATEMENT  
*Chicago Convention Fund*  
*Receipts*

Coal company contributions..\$3,015.00  
Special contributions..... 2,250.00  
Sale exhibit space, Hotel La  
Salle ..... 810.30  
Receipts banquet and smoker. 1,270.00  
Total receipts.....\$7,345.30

*Disbursements*

Western Union Telegraph... \$47.91  
Multigraphing ..... 109.90  
Kaufman & Fabry (reprints  
and making of photographs) 101.00  
Press clipping service..... 12.45  
Office supplies..... 65.05  
Reporting convention..... 236.00  
Stenographic help..... 286.03  
E. R. Coombes (assistant to  
secretary, salary and ex-  
penses) ..... 609.60  
Postage ..... 210.00  
J. F. Callbreath (expenses).. 629.45  
Commissions for securing ad-  
vertising, etc..... 456.50  
Printing (programs, smoker  
booklet, and miscellaneous  
printing) ..... 491.34

Proceedings (printing, on ac-  
count of)..... 982.58  
Publicity ..... 357.50  
Hotel La Salle, smoker and  
banquet, telephone, tele-  
graph, etc..... 1,394.73  
Badges ..... 253.65  
Miscellaneous—  
Lettering badges, making  
cartoons, entertainment  
at smoker, etc..... 341.61  
Printing and mailing official  
call and stenographic work  
on program, etc., Washing-  
ton office..... 750.00

Total disbursements.....\$7,345.30

As per cancelled checks and vouchers, No.  
1 to No. 132, inclusive, Fort Dearborn Na-  
tional Bank, Chicago, Ill.; Metropolitan Bank,  
Washington, D. C.

*Banquet and Smoker*

Received for tickets to ban-  
quet ..... \$695.50  
Received for tickets to  
smoker ..... 660.00  
Total .....\$1,355.50

Cost of banquet and smoker  
paid to Hotel La Salle,  
Voucher No. 110—

Banquet .....\$624.00  
Smoker ..... 500.00  
Entertainment at  
smoker ..... 160.00  
Printing song books 12.00  
Invitations to ban-  
quet ..... 87.50  
Mailing and send-  
ing invitations.. 71.50  
Printing tickets, etc. 8.50

Total cost of banquet  
and smoker.....\$1,463.50  
Deficit on smoker and banquet..... \$108.00

*Proceedings*

Bills rendered—  
Printing, binding, etc.....\$1,273.43  
Mailing and postage..... 162.93  
\$1,436.36

Paid by checks Nos. 131 and  
132 ..... 982.58  
\$453.78

Deficit paid from National Metropoli-  
tan Bank, Washington, D. C., on  
account balance printing proceed-  
ings ..... \$453.78

The secretary announced that the Chicago  
committee had provided funds in excess of  
the amount which they were asked for and  
which was estimated to completely cover the  
convention expense, but because of the un-  
usual size of the Proceedings and the extra

cost of printing same, the fund was not quite sufficient to meet this additional expense, which was cared for from the regular fund, as shown by the secretary's financial statement and auditor's report.

After the meeting of the Directors, report of which appears elsewhere, the questions which had been submitted to the members were presented to the meeting, and each question discussed fully by those who were present. The secretary announced that a considerable number of these questions had been answered by letter, and that the greater part of these replies answered the questions in the affirmative.

The questions submitted, with the decision arrived at after the discussion, follow:

*First—Should the provisions of the Clayton bill, exempting labor and farmers' organizations from the provisions of the Sherman anti-trust law, be repealed?*

The decision of this question was in accord with the suggestion of President Douglas, stated in the following language: "I am not in favor of endeavoring to alter any pre-war condition. The Clayton bill was passed, I believe, four years ago. It was a pre-war measure. We have heartily agreed with Secretary of Labor Wilson's public statement to the effect that he and the Department of Labor are opposed to any change in the pre-war conditions, especially those affecting the unionizing of camps which were open camps prior to the war, and vice versa. Evidently, the general consensus of opinion is the same that there should be no action taken on the first question submitted." Questions answered in the negative.

*Second—Should national legislation be sought requiring that the principles embodied in the Danbury hatters case decision be applied to all persons alike, unless such persons see fit to incorporate, thus making the organization assume responsibility for its acts?*

Decided in the affirmative.

*Third—Should national legislation be sought permitting business combinations now prohibited by the Sherman law, such combinations to be subject to the supervision of some governmental agency with power to withdraw approval whenever the business combination shall operate to create burdensome monopoly or in other ways fail to serve the public good, and should all combinations, whether of labor or capital, be brought under the control of this supervisory power?*

Decided in the affirmative.

*Fourth—Shall state legislation be sought providing for the compulsory investigation and public report upon all industrial disputes before a strike can be legally declared, following the line of the Canadian industrial disputes act, as exemplified in the Colorado law, which has for three years secured in-*

*dustrial peace in a state heretofore torn by labor troubles?*

Decided in the affirmative.

*Fifth—Shall state legislation be sought providing for state constabulary systems similar to the Pennsylvania law, through which disturbances of all kinds can be quickly controlled by trained, conservative men, thus relieving the state militia from any duties in this behalf, and providing a means for preserving public order, now that the state militia has been largely withdrawn from local service?*

Decided in the affirmative.

*Sixth—Shall effort be made to secure amendment to the war income tax law, in order to make its application more equitable as it relates to mine taxation?*

Decided in the affirmative by the following special resolutions, offered by Mr. Harry L. Day, and unanimously adopted:

"Whereas the war excess profits tax provisions of the war revenue bill, as applied to corporations, companies and partnerships, abandons the principle of taxing income and establishes a doubtful, ambiguous and unfair method of taxation; and

"Whereas it is evident that radical discriminations in the payment of war taxes will result from that portion of the bill referred to; therefore, be it

*Resolved*, That the directors of the American Mining Congress hereby condemn the unfair method referred to, and petition Congress to do equity by amending the law so that the burdens of war taxation shall be fairly and evenly distributed; and be it further

*Resolved*, That a committee be appointed by the American Mining Congress to take such action as may be deemed advisable."

During the discussion on the third question submitted the subject of the Webb bill, providing for business combinations in foreign trade, was brought up for consideration, and a resolution was adopted that the American Mining Congress should exert its best influence in bringing about the enactment of this bill by Congress.

*Seventh—Shall effort be made to prevent the policy of price fixing and Government regulation of business, admittedly necessary during war time, from becoming a fixed policy of the Government thereafter and during normal times?*

Decided in the affirmative.

*Eighth—Shall a campaign be undertaken for the creation of a Department of Mines and Mining, with its head a member of the President's Cabinet, in order that first-hand information may be available to the Administration when vital matters affecting the mining industry are under consideration?*

Decided in the affirmative.

#### DIRECTORS' MEETING

A meeting of the Board of Directors of the American Mining Congress was held in the



Rose Room of the Hotel Astor, New York City, November 15, 1917.

Present—Walter Douglas, New York; Samuel A. Taylor, Pittsburgh; Dr. James E. Talmage, Salt Lake City; M. S. Kemmerer, New York; Harry L. Day, Wallace, Idaho, being a quorum of said board.

The minutes of the last meeting of the Board of Directors and various meetings of the Executive Committee were read and approved.

The following officers were elected:

President—Walter Douglas, New York.

First Vice-President—Harry L. Day, Wallace, Idaho.

Second Vice-President—M. S. Kemmerer, New York.

Third Vice-President—George H. Crosby, Duluth.

Secretary—J. F. Callbreath, Denver.

Executive Committee—Walter Douglas, Charles M. Moderwell, Carl Scholz.

The recommendations of the members' meeting were approved.

### **NEW EXPLOSIVES ACT IN FORCE; ALL USERS MUST HAVE LICENSES**

Any person in the United States found with explosives in his possession and who does not have a license issued by the Federal Government, showing the purpose for what the explosives are to be used, will be at once arrested and fined up to \$5,000 or sent to prison for one year. If the circumstances warrant, the person may be fined \$5,000 and in addition given the one year in prison.

This is the principal clause in a war measure passed by the last Congress, which is now being put into effect by the Bureau of Mines, which has been charged with its enforcement. Francis S. Peabody, of Chicago, a well-known coal operator, familiar with the use of explosives, large amounts of which are used in the coal mining industry, has been appointed by Secretary of the Interior Lane to act as assistant to the Director of the Bureau of Mines, Van H. Manning, in the enforcement of the law. Under the law the director of the bureau is empowered to utilize the services of all United States officers and all police officers of the States, including the city police forces, county sheriffs, deputies, constables, and all officers in any way charged with police duties. The police of the cities have already been organized for this work, headed by a committee of chiefs of police in the big cities, of which Maj. R. W. Pullman, Superintendent of Police of Washington, D. C., is chairman. The police are not only to look after the enforcement of the law, but are also to make thorough investigations of all dynamite outrages and fires in factories and warehouses, and to make their reports to the Director of the Bureau of Mines.

Persons apprehended in plots to blow up factories and bridges will be turned over to

the authorities for prosecution under Federal or State laws. Most States have specially severe punishments for these crimes. New York has an extreme penalty of twenty-five years' imprisonment for the placing of dynamite with intent to blow up property. The penalty provided in this Federal war measure is merely to cover the illegal possession of explosives.

The law provides that everyone who handles explosives must have a license. The manufacturer, the importer and the exporter must have licenses issued by the Bureau of Mines in Washington. The seller of explosives and the purchaser of explosives must also have licenses, these to be issued generally by county clerks or other local officers who are authorized to administer oaths. There will be at least one licensing officer in each county, and more agents will be designated if the county is sufficiently large to warrant it. If a State has laws providing for a system of licensing persons manufacturing, storing, selling or using explosives, the State officials authorized to issue such State licenses shall be designated as Federal licensing agents; also city officials qualified to issue city explosives licenses will be given authority to issue Federal licenses. A Federal license will not relieve any person from securing licenses required under State laws and local ordinances.

In each State there will be appointed a State explosives inspector, who will represent the Bureau of Mines in the administration of the law within the State.

Only citizens of the United States or of countries friendly to the United States and the allies may so obtain licenses.

Contractors, mining companies, quarrymen and others using large quantities of explosives, which are handled by employes, may issue explosives to their employes only through those employes holding a license, called a foreman's license.

The purchaser of dynamite in obtaining a license must state definitely what the explosive is to be used for, and will be held accountable for its use as stated and the return of any explosives that may be left.

With the strict enforcement of this law, the Federal authorities hope to prevent explosives falling into the hands of evilly disposed persons and to put a stop to all further dynamite plots.

### **Blauvelt to Handle Coke.**

The Fuel Administration announced November 5 the appointment of Warren S. Blauvelt, of Detroit, Mich., to act on the staff of the Fuel Administration on all matters pertaining to coke. Mr. Blauvelt is a prominent engineer, and has been connected with the Steere Engineering Company, of Detroit, Mich.

## UTAH CHAPTER ADDS TO ITS ACCOMPLISHMENTS

### Defeat of High Tax Plans, But One of the Various Services It Has Done the Min- ing Industry

Utah mining men have demonstrated to the satisfaction of themselves and of all others who have observed the operations of the Utah Chapter that a mining organization, formed and conducted along proper lines, can be made a potent agency to advance the interests of the industry and of those engaged in it.

The Utah Chapter's success is not attributed to any extraordinary circumstances. Problems of mining men in Utah are identical with or closely similar to the problems which attend mine operation elsewhere. These problems, most of which are best met by concerted or cooperative action, had previously been met in Utah either by individual effort or, occasionally, by temporary organization.

Out of these conditions at length grew a conviction that permanent organization along broad lines, autonomous in all local affairs and with the strength and prestige of national affiliation, had become a vital need. The American Mining Congress already had a fair membership in the State and this membership was the nucleus about which the present chapter was formed. The Chapter today represents practically the entire industry in the State.

Secretary J. F. Callbreath of the American Mining Congress was present and assisted at an organization meeting held at Salt Lake City early in 1915 and attended by representative mining men of the State. Permanent offices were opened soon afterward, and A. G. Mackenzie was retained as secretary of the chapter. The by-laws adopted by the chapter were drawn along broad lines so as to provide proper recognition and means of expression for all branches of the mining business in the State.

Thorough cooperation and a determination to make the organization of direct and practical, as well as of indirect, value to all members have been guiding principles of the Chapter from the first. There were, naturally, those who doubted whether any plan of organization and operation could accomplish definite results of consequence. The actual record of the Chapter's accomplishments, however, has dissipated doubts to such an extent that doubters are rare in the State today. As a result of organization, the mining industry speaks with one voice and acts with one accord on all issues of common interest.

The activities of the Chapter have been many and varied. Within a year after its organization, it was called upon to join and, in large part, to lead in a movement against a taxation program in the State. The proposed program was overwhelmingly defeated at the polls. The campaign against it was conducted with the fullest publicity to show the people of the State that the success of the proposed measures



A. G. MACKENZIE  
Secretary, Utah Chapter

would seriously and adversely affect the State's development and prosperity.

The Utah Chapter was the first business organization of the State to declare in favor of the principle of workmen's compensation when that matter came before the legislature in 1917. After the law had been enacted, the Chapter, on its own initiative and at its own cost, brought a noted authority on workmen's compensation to Utah to study the situation there for the benefit of the State Industrial Commission and the mining industry. Copies of his report were furnished to the Industrial Commission as well as to members of the Chapter.

The national affiliation has been found especially valuable since the war began. The officers of the American Mining Congress at Washington keep the Chapter fully advised regarding important legislative and other matters affecting the industry. Usually this information is sent on the initiative of the Washington office, thus giving the local organization a service which could not be otherwise obtained except at great cost and which probably could not be rendered by any other organization at any price.

The Utah Chapter has sought to give mine prospecting and development the fullest support. The Chapter, in cooperation with the State School of Mines and the United States Bureau of Mines, assisted to provide free courses in prospecting at the University of



Utah and to furnish free qualitative analyses of mineral specimens for prospectors. All possible assistance was given the Bureau of Mines Rescue Car when it visited Utah this year and officials of the Bureau say this attitude was of value in making the tour of the car successful.

The office of the Chapter has accumulated a considerable amount of data regarding the industry in the State and these data are employed for the information of the public as well as members of the Chapter. The Chapter has participated as an organization and through its members individually in various worthy public movements, such as the Red Cross fund and the liberty loans. The chairman of the Liberty Loan State Committee is a member of the Chapter and an active mine operator.

A regular part of the Chapter's work has been the publication for the use of members of legislative and other useful information. In all instances where desirable, the subject matter is annotated and indexed so as to make its purport readily ascertainable. The State Workmen's Compensation Law, the new national income and war tax laws and the resolutions suspending mining assessment work are subjects that have been thus treated recently.

The Chapter is growing steadily in strength and prestige. It has accomplished in large part its purpose to unite those engaged in mining in the State and to give them service of direct value. Much work lies ahead, but the achievements of the thirty months since the Chapter was formed justify the conviction that its usefulness to the industry has been fully demonstrated.

The officers and directors of the Utah Chapter are as follows:

A. B. Apperson, vice-president United States Fuel Company, governor; Walter Fitch, president Chief Consolidated Mining Company, first vice-governor; C. E. Allen, manager of mines, United States Smelting, Refining and Mining Company, second vice-governor; J. William Knight, of the Knight interests, third vice-governor; L. B. McCornick, vice-president, McCornick & Co., Bankers, treasurer; J. F. Cowan, Fred Cowans, J. C. Dick, R. J. Evans, R. C. Gemmell, Norman W. Haire, John M. Hayes, Thomas Kearns, G. W. Lambourne, C. E. Loose, Duncan MacVichie, J. C. McChrystal, Imer Pett, E. J. Raddatz, E. S. Rolapp, Solou Spiro, F. I. Westcott, C. W. Whitley and William Wraith.

#### Allows Price Increase

An increase of 25 cents per ton was allowed November 22, in the price of lignite slack at the mine, in the Northern Field and El Paso districts, as a result of an order by the United States Fuel Administration. Both districts are in Colorado.

The former mine price was \$1 per ton, but under the order of the Fuel Administration the price in the future will be \$1.25 per ton.

#### ASSISTANT SECRETARY IN CHARGE OF SOUTHERN MINING STATES



WILLIAM M. CONRAD

William M. Conrad, Assistant Secretary of The American Mining Congress, is a native Southerner, and comes of a line of colonial Virginians resident in the Shenandoah Valley of the Old Dominion for over 200 years.

Trained in the law at the University of Louisville, Mr. Conrad is now giving much time to assisting Secretary Callbreath in the large volume of legal work which has been thrust upon him through the various governmental moves.

Before coming to Washington, some years ago, Mr. Conrad was assistant secretary of one of the largest savings institutions in Louisville, Ky., where he had charge of the mortgage loan negotiations and various other lines of the legal work of the corporation.

For some time past Mr. Conrad has been directing particular attention to the advancement of the work of Congress in that rapidly advancing territory south of the Ohio River, and is especially enthusiastic over the strides being made in mining development in Alabama, Tennessee, and Kentucky.

The Koering Cyaniding Process Company, formerly of Detroit, has moved its offices, laboratory and construction plant to Salt Lake City, Utah. The company is now permanently located at Suite 220-224 Dooley Block, Salt Lake City.

## TO MOVE COAL AHEAD OF GENERAL FREIGHT

### Drastic Steps Taken by Fuel Administrator to Insure Supply of Coal for Industries and Homes

In order to secure immediate relief in the transportation of coal and coke, Fuel Administrator Harry A. Garfield has requested Director of Priority R. S. Lovett to issue an order giving preference to all rail movements of coal, coke and empty coal and coke cars.

The order requested by the Fuel Administrator requires the railroads to place all shipments of coal and coke ahead of general freight. The Fuel Administration believes that only a general priority order insuring the prompt movement of coal and coke can relieve the present congestion of fuel traffic on the railroads.

The plan to extend preference to empty cars returning to mines and coke ovens will operate to afford the greatest possible relief to coal and coke producers who have been hampered in keeping up their output by the shortage of cars.

Fuel Administrator Garfield asked that the order be continued in force until further orders. This will enable the Fuel Administration to expedite the general distribution of the coal supply, and to handle the available coal stocks to the best possible advantage.

## REPORT MEMBERSHIP COMMITTEE

*To the Board of Directors*

*of the American Mining Congress:*

The work of your Membership Committee during the past year, has been concentrated largely in the Anthracite district of Pennsylvania, the copper and Iron ranges of Michigan and Minnesota, the oil fields of California, Wyoming, and Colorado and the iron and coal fields of Alabama, Tennessee, and Kentucky.

The members of the Committee devoted much personal time to presenting the claims of the Congress to the leaders of the mining industry by individual calls and personal letters, followed by personal interviews.

In the opinion of the chairman nothing produces results in organization unless the effort put forth is endorsed by recognized leaders in the industry. To merely acquire members who will let their membership lapse the following year, is, at the most, a temporary, if not altogether, a profitless campaign.

From the outset, therefore, whenever a member of the Committee proposed to enlist operators and transportation heads, active in mining and hauling of ore, coal or oil, the cooperation of the secretary's office was secured, and well-known and recognized members of the mining industry were requested to lend their services to the furthering of the work of the Congress.



DR. HENRY MACE PAYNE  
Chairman, 1917 Membership Committee

In all cases a hearty response was had, and whenever the achievements of the Congress, its purposes and aims were explained enthusiastic support has been rendered. As a result, the past year has seen practically every anthracite operator, the majority of the copper and iron operators of the Lakes district, the leaders in the Alabama, Tennessee and west Kentucky fields, heads of transportation interests identified with the hauling of ore and coal, and the pioneers and leaders of the California, Wyoming and Colorado oil fields all enrolled.

In this manner a great cooperative movement has taken on marked impetus, and if the individual members will continue to support the efforts of the secretary and the Board of Directors as they have the labors of the Membership Committee, the American Mining Congress will assume an even greater sphere of service to the mining industry than it has occupied in the past. THE MINING CONGRESS JOURNAL performs a unique function, in that it combines a nontechnical résumé of the legislative and economic situation with a skillfully selected and comprehensive buyers' index, which the Membership Committee has learned appeals especially to executives no less than the pertinent and forceful editorials, which first brought it into prominence.

H. M. PAYNE,  
Chairman, Membership Committee.



## HEAD OF BUREAU OF THE MINT IS A WESTERN MINING MAN

A Western mining man who has been given a prominent place with the Government is Ray T. Baker, the Director of the Bureau of the Mint. This is said to be the first time in the history of the bureau that a mining man has been placed in charge of this division of



*Harris & Ewing*

RAY T. BAKER  
Director of the Mint

the Government's work, where a practical knowledge of mining is almost a requisite. Mr. Baker was born in Eureka, Nev., when it was one of the largest silver producing centers in the United States. He attended the public schools at Eureka, and later attended the high school at Oakland, Cal., where his father, who was chief counsel of the Southern Pacific Railway, was called by his duties. Following the completion of his high school course, Mr. Baker attended Alameda University Academy. He stopped in the middle of his schooling to spend two years on a Nevada ranch as a cowboy. He then took the mining course at the University of Nevada. With the opening of the Tonopah and Goldfield districts, he was among the first to enter those camps. He struck out, however, for the desert country, and operated for a time in the Greenwater section. Mr. Baker is responsible for the location of the Ebehebe copper properties. He was a pioneer in Rawhide in 1907. For many years Mr. Baker has been active in

Nevada politics, and shortly after the Democratic party came into power he was appointed secretary of the American Embassy at Petrograd. He returned to the United States in 1916, shortly after which he was appointed Director of the Mint. Since Mr. Baker has been in charge of the Bureau of the Mint it has done more work than any time in its history. Every mint in the United States is working on a twenty-four-hour basis, Sundays and holidays included. At the present time these mints are turning out 3,000,000 1-cent pieces daily. The demand for subsidiary coins has been unusually great during the past year, and the mints are turning out a larger percentage of coins than in any other year.

## PENALTY CLAUSES IN FORCE IN MAJORITY OF DISTRICTS

The application of the advance in wages has become effective in nearly all the large coal producing regions in the country. Some misunderstanding occurred in the southwestern districts, that is to say Missouri, Kansas, Oklahoma, Arkansas and Texas, but even it has been adjusted.

In districts where contractual relations exist between mine workers and operators, penalty clauses are being submitted to the Fuel Administrator for his approval.

There is no indication of any disturbance in the labor conditions in the applying of the advance in wages with the penalty provisions agreed to.

Illinois, Indiana and Ohio, where considerable unrest existed, have been straightened out, and miners are now giving service in the mines of these States.

## Petroleum Output Slightly Less

As between September and August, 1917, a general slight decline, in part seasonal, occurred in the production of petroleum in all fields except Oklahoma-Kansas, Gulf Coast and Rocky Mountain, where moderate gains were made in September. As between September, 1917, and September, 1916, substantial gains are credited to all fields except Lima-Indiana, Illinois and North Louisiana in 1917.

Except in the Appalachian, Illinois, and North Texas fields, where slight additions were made to stocks, the requirements of crude petroleum by refiners and other consumers in September, 1917, exceeded the supply of fresh oil available, and moderate drafts on stocks were necessary to make up the deficiency.

Outside the Appalachian and Oklahoma-Kansas fields, stocks of crude oil on hand at the end of September, 1917, were appreciably less than at the end of September, 1916.

These data were prepared under the supervision of J. D. Northrop.

## LAKE PRIORITY ORDER CANCELLED NOVEMBER 30

### With the Supply of Coal as Great in the Northwest as in Other Parts of the Country Preferential Order is Suspended

Director of Priority R. S. Lovett was requested November 23, to cancel priority order No. 1, which gave preference to coal shipments bound to the Northwest by way of the Great Lakes. Under this order, a vast coal supply has been built up in the Northwest in advance of the closing of lake navigation.

The Fuel Administrator's recommendation provided that the lifting of the priority order begin at the mines on November 30. Cars at the mines at that date were loaded, and given priority until they arrived at their lake port destinations.

The decision to recommend the cancellation of the priority order was reached after Fuel Administrator Garfield had conferred with F. C. Baird, in charge of lake transportation for the Fuel Administration and W. H. Grovermann, secretary of the Northwestern Coal Dock Operators Association, and State Fuel Administrator Homer J. Johnson of Ohio. The cancellation of the lake priority order is allowing the coal produced in the central coal fields to find its way to its natural markets, and will do much to relieve present conditions in the central and eastern parts of the country.

The Fuel Administration believes that the supply secured for the Northwest under the lake priority order has placed that section on a parity with the rest of the country for the winter. If further coal is needed in the Northwest before spring, steps will be taken to insure all-rail shipments from nearby fields to complete the requirements. With the lifting of the priority order arrangements were made to insure immediate relief for New England, where the enormous industrial demands for coal threaten to outstrip the supply.

### MINES MUST BE KEPT OPEN GARFIELD TELLS OKLA. OPERATORS

Fuel Administrator Harry A. Garfield has notified Oklahoma bituminous coal operators that under no circumstances must they permit the closing down of their mines pending settlement of their claims for increased mine prices for their output. The Oklahoma operators notified the Fuel Administrator that they would be unable to carry out their wage agreements with the mine workers unless they were granted additional increased mine prices over and above the general increase of 45 cents a ton allowed by President Wilson. The wage agreement between the Oklahoma operators and their mine workers and the increase of 45 cents a ton were to have been made effective as of November 1.

The coal operators' association, however, adopted a formal resolution refusing to execute their agreement with the mine workers' organization, which increased wages, "until the Fuel Administrator grants to us an increase in the selling price sufficient to cover the same with reasonable profit." They likewise resolved that even if granted a further increase increased compensation to miners should not be retroactive as from November 1.

Fuel Administrator Garfield has determined that there shall be no cessation of production by any mine while demands for price increases are under consideration. In reply to a telegram from Oklahoma operators, setting forth that they could not grant increased wage demands and continue to operate without further price increases, he sent the following telegram to R. T. Price, president of the Oklahoma Coal Operators' Association:

"Replying to your telegram, will not consent to change 45-cent increase to cover increases of wages. If, as total result, you are unable to operate at a profit, the way to proceed is to file statements here showing your 1916 total costs and costs for 1917, month by month, and meanwhile keep the mines in operation. Alternative will be to turn over mines to me for operation pending determination of costs. In other words, the only way in which the relation of increase of wages to increase allowed by President's orders in prices of coal can now be adjusted is by showing actual labor costs in conjunction with total costs as compared with earlier period above indicated. Under no circumstances must mines be closed down."

### The Penalty Clause

The United States Fuel Administrator has directed that "if any mine worker or group of mine workers in any way interrupts the operation of the mine or causes a strike, the operator shall deduct from the earnings of each employee, except those who continue at work, the sum of one dollar per day for each day or fraction thereof that such mine worker fails to report for work.

"All questions arising under the foregoing provision are subject to review by the United States Fuel Administrator.

"If a mine is closed or the men locked out by an operator, without just cause, the United States Fuel Administrator will impose upon and collect from such operator a fine at the rate of one dollar per day for each mine worker affected.

"All fines imposed under this order shall be paid to the American Red Cross through the United States Fuel Administrator.

"Every mine operator shall file with the United States Fuel Administrator regular reports, on prescribed forms, giving him such information as will enable him to enforce the foregoing order."



## TAKES ALARMING VIEW OF FUEL SITUATION

### National Coal Association, in Formal Statement to the Public, Says There is Less Than a Week's Supply of Bituminous Coal in Reserve

Under date of November 28, the National Coal Association issued the following statement:

The National Coal Association, realizing the critical condition caused generally throughout the country by the scarcity of coal, feels that in justice to the public and to the producers of bituminous coal a full statement of the situation, so far as it can be ascertained by the Association, should be made public at this time.

Ordinarily at this time of the year there is in the hands of consumers a supply of bituminous coal estimated to be sufficient to meet their needs for thirty days. A careful canvass by the Association and other agencies of the present stocks of fuel in this country discloses that at this time there is on hand less than a week's supply, and that with the exception of a few sections of the country, such as the Northwest, the entire country is facing a fuel famine.

The results of such a famine would be disastrous. Millions of household users of bituminous coal would experience acute discomfort and in many cases extraordinary hardship. The great plants manufacturing munitions in New England and the East would be compelled to close down or to run on part time. Already in several instances some of the largest of these plants have on hand a supply of fuel wholly inadequate for their needs. Public utility plants, such as water, gas, light and power plants throughout the entire country would be forced either to suspend operations, probably for days at a time, or to run with greatly curtailed service.

Bituminous coal operators of the National Coal Association, representing an output of more than 250,000,000 tons monthly, have been endeavoring for weeks past to correct this situation. They have sought unceasingly to bring the production of their mines to capacity.

The latest report of the United States Geological Survey shows that for the week ending November 10 bituminous mines in the great producing sections of the country produced only 77.2 per cent of the amount they were capable of producing. This means that were all conditions in harmony with the desire of bituminous operators to obtain a 100 per cent output from the mines, the yield of coal would have been approximately one-third greater than it has been. Also while official government figures show the output of coal during the week of November 17 to have been higher than in any week since July, they show that mines produced but three-fourths the amount of coal they were capable of producing.

The fact that coal production was higher this week than at any time since July does not mean that it was sufficient to meet the military, naval, industrial, and domestic needs of the nation. On the contrary coal consumption has increased at a much greater rate than production during the period since July and the output for the week of November 17, although establishing a new record for four months, was not sufficient to meet the heavy demands of the nation's war-time activities.

Analyzing the inability of the mines to produce the amount of coal they are capable of producing, the Geological Survey states that two-thirds of this inability was directly due to a shortage of cars.

The National Coal Association recognizes that the railroads are congested and crowded with freight far beyond anything ever before experienced by them, but this does not change the fact so far as concerns the fuel conditions. The fact remains that we are face to face with a fuel famine. There is relief in sight only through additional supply of cars to run the mines at full capacity and preferential movement of the coal from the mines to the consumers.

Only orders establishing the preferential movement of coal by the railroads, issued at once, can correct the situation. The public must recognize that such orders are for its benefit, and, therefore, must support the railroads in carrying them out.

Bituminous coal operators will certainly run their mines to the limit of production; if they are given the opportunity.

### Illinois Operators and Miners Agree

The Fuel Administrator on November 26 approved an agreement between the coal operators and the mine workers of the Illinois bituminous fields. The agreement had been under consideration for some time. The principles of the agreement had been settled for several weeks, and final details were arranged on the date specified. After conference with officials of the Fuel Administration, the agreement was signed by H. C. Adams for the operators and Frank Farrington for the mine workers.

The agreement includes a so-called "penalty clause," under which both operators and miners are subject to fine for any undue interference with production.

### To Help Save Fuel

Soldiers in the National Army cantonments are aiding the United States Fuel Administration in its attempt to plug all fuel leaks. Brig. Gen. I. W. Littell, of the Quartermasters Corps, N. A., has assured Fuel Administrator Garfield that the odds and ends of lumber left from building cantonments, together with all other possible firewood, is being piled together and saved for camp fuel this winter.

### GOVERNMENT SPECIALISTS WELL KNOWN TO MINING MEN



*Harris & Ewing*

EDMUND NEWTON

Edmund Newton, the superintendent of the Lake Superior Experiment Station of the Bureau of Mines, was born in Queens, Long Island, New York. His early education was obtained in the public schools. He is a graduate of the Jamaica (N. Y.) High School. He then entered the Columbia School of Mines, in which he obtained an E. M. degree in 1911. Following the completion of his course at Columbia, he became instructor in surveying at the Sheffield Scientific School. Later he was engaged in construction work on the Cape Cod Canal. He then joined the staff of the New Jersey Zinc Company, and was in its service until February, 1912. At that time he was appointed metallurgist of the Minnesota School of Mines Experiment Station at Minneapolis. He organized the work of that institution and had charge of it until its affiliation with the Bureau of Mines Experiment Station this year. He is now in direct charge of the Bureau of Mines work connected with the concentration of low-grade iron and manganese iron ores. Mr. Newton has now severed his connection with the state institution, and has been placed in charge of the manganese work to which the Lake Superior station is being devoted, in an effort to solve some of the metallurgical problems which

stand in the way of making the United States independent of imported manganese ore.

### PRODUCTION OF SPELTER FOR THIRD QUARTER IS 156,600 TONS

As a result of a canvass by the United States Geological Survey to ascertain the production of spelter in the United States during the third quarter of 1917, C. E. Sieben-thal estimates, on the basis of returns of over 95 per cent of the production, that the output of primary spelter from domestic ores was 132,700 short tons, and from foreign ores 23,900 tons, a total of 156,600 tons, as compared to an average of 180,569 tons per quarter during the first half of 1917, 175,502 tons per quarter during the last half of 1916, and 158,226 tons per quarter during the first half of 1916. In addition to the primary spelter, the amount distilled from skimmings, drosses, etc., was 4,400 tons, as compared with 6,000 tons in each of the two quarters preceding. The total production for the first nine months of 1917 was 444,267 tons from domestic ores, 73,457 tons from foreign ores, and 16,550 tons from secondary materials. Returns not yet having been received from the Robert Lanyon Zinc and Acid Company and the Clarksburg Zinc Company, it has been necessary to estimate their output, together with that of two secondary plants.

The stocks of spelter at smelters September 30 amounted to 47,186 tons, as compared with 33,147 tons June 30, and 17,598 tons January 1.

The zinc content of zinc ore imported into the United States in the third quarter of 1917 was 15,000 tons, and the exports during July and August of spelter made from domestic ores were 16,800 tons, and of spelter made from foreign ore 3,000 tons. The number of idle retorts September 30 was 64,626, or 28 per cent of the total number of retorts, and included eighteen entire plants, several of which are being dismantled. One electrolytic plant also will possibly be dismantled.

It is evident that many zinc smelters, loth to break up their labor forces while there was a probability that Governmental requirements might call for their full capacity, have continued smelting when it was no longer profitable, or even at a loss, thinking that the heavy orders expected when this country entered the war would eventually be given, but it is also evident that this unprofitable production cannot much longer be maintained.

### Fuel Conservation Urged

The average American home is superheated. A room that is above 68 degrees Fahrenheit is too warm for health, and exposes the occupants to catarrhal diseases and pneumonia. Eminent American physicians are responsible for these opinions. Leading doctors support the proposal of the United States Fuel Administration that all American homes adopt 68 degree as a maximum temperature.





*Photo by Harris & Ewing*

F. RUSSELL COOMBES

Assistant to the Secretary of the American Mining Congress

## PRICES AT NEW MEXICO

### MINES ARE INCREASED

A tentative re-classification of mine prices for bituminous coal produced in the New Mexico fields has been announced by the United States Fuel Administration the new prices were arrived at by the Fuel Administration in cooperation with the state fuel administrators of New Mexico, Arizona and Texas. Under the former scale all New Mexico fields received the same price. The readjusted scale gives different prices to the Sougarte, Monroe and Gallup, and the Carthage and Cerrillos fields. Former prices were:

New Mexico: Run of mines, \$2.75; prepared sizes, \$3.25; slack or screenings, \$2.

The prices just announced are:

Sougarte field, run of mine, \$3.45; prepared sizes, \$4.45; slack or screenings, \$2.45. Monroe and Gallup fields, run of mine, \$3.50; prepared sizes, \$4.95; slack or screenings, \$2.45. Carthage and Cerrillos fields, run of mine, \$4.50; prepared sizes, \$5.50; slack or screenings, \$4.

State fuel administrators throughout the country have been charged with the duty of handling all complaints, inquiries and requests for relief in their respective states, under instructions issued by the United States Fuel Administration.

## OFFICIALS DISCUSS STABILIZATION OF SILVER WITH OPERATORS

Increased production of silver to settle balances of trade with silver-using countries as a means of preserving our gold supply is the object of a joint resolution now before the House and Senate committees on banking and currency seeking to authorize the President to appoint a commission of three members to visit our allies and neutral nations with a view of making an international agreement as to the coinage of silver subject to approval by Congress. The resolution would authorize a maximum of \$100,000 to defray the expenses of the commission.

Stabilization of the price of silver is the desire of the Government. Data as to the cost of production has been submitted to R. T. Baker, director of the mint, who conducted a conference at which was present W. P. G. Harding, governor of the federal reserve board, Albert Strauss, the Treasury Department's representative on the war trade board, Governor Boyle, of Nevada, and Senators Ashurst, Newlands, Pittman, Shafroth and Smoot.

Director Baker and other government officials will receive upon its arrival in Washington a delegation from a mining meeting just held in Salt Lake City. Information given by this delegation, the data already on hand and further information to be obtained by Director Baker will be taken into consideration before final action is taken.

Whatever action will be taken, Director Baker said, will be in the hope of stimulating production and will be of equal advantage to the producers and the Government.

## MINES ORDERED TO GIVE PREFERENCE TO R. R. CONTRACTS

Orders assuring an adequate supply of coal for use as fuel by the New York, New Haven and Hartford Railroad and the Central New England Railroad Company were announced November 26 by the United States Fuel Administration. The orders direct all mines under contract with these railroads for the delivery of coal to give preference to the contract requirements of these railroads over other shipments, except where coal is diverted by direct requisition of the Fuel Administration.

The order follows a policy adopted by the Fuel Administration for supplying all railroads with coal for fuel, and is one of a series of orders which will fill the demands of railroads operating in the eastern part of the country, where a large proportion of the nation's war industry is located.

Dr. F. C. Honnold, of Chicago, is a frequent visitor in Washington, and at the offices of the American Mining Congress.

## EXTRACTS FROM INSTRUCTIONS TO EXPLOSIVES LICENSORS

Those authorized to issue explosives licenses have received detailed instructions, of which the following paragraphs are taken:

**"Cooperation with State and Local Officials**—In order to secure the proper enforcement of the explosives regulation law, it is important that there be the heartiest cooperation among all federal, state and municipal officials, and you are urged to keep in touch with your county and city officials, such as the mayor, chief of police and chief of fire department, so that they may have some information as to who have received licenses from your office, and also advise them of the instructions which you have issued to licensees.

**"Compliance with Explosives Regulation Law**—The licensor should endeavor to explain the purpose of the law and the privileges of the licensee to such persons as in his opinion may require such explanation and instructions. He should further instruct the licensee that the federal license will not permit anyone to violate a state law or a local ordinance. All such State laws and local ordinances must be complied with fully, and if there is any question in the mind of the licensee regarding such matters the licensee should be advised to confer with the local officers of the law or communicate with the state explosives inspector (appointed by the President under the explosives regulation law) before taking any steps that might subject him to prosecution and punishment.

**"The law does not apply to explosives or ingredients while being transported upon vessels or railroad cars in conformity with statutory law or Interstate Commerce Commission rules; nor to small arms or shotgun cartridges; nor in such way as to prevent the manufacture, under the authority of the Government, of explosives for, their sale to, or their possession by, the military or naval service of the United States of America.**

**"Inquiry Before Issuing Licenses**—You will be expected to use good judgment in the issuing of licenses, and it is not sufficient that you simply issue a license upon the presentation of an application under oath. There may be times when, owing to the urgency of your other duties, you may be prompted to issue an explosives license without full investigation, and you are cautioned against such procedure. This war measure will give you an opportunity to do your bit in a substantial manner through public service.

**"Personal Knowledge of Applicants**—The purpose of this law is to prevent disloyal persons from securing explosives and to keep explosives out of the hands of persons who will not guard them carefully enough to prevent them from being stolen. In this matter you are authorized to use your discretion, and you are directed to refuse to issue a license to any person not known to you to

be responsible and loyal, or if not known to you, unless he is recommended by reputable citizens of the community. In the event that you refuse to issue the license to an applicant, the entire matter should be reported immediately to the Director of the Bureau of Mines, Washington, D. C. The complaint of an applicant on account of the delay or embarrassment to him resulting from your refusal to issue the license immediately on request should not deter you from acting firmly in enforcing the law as explained to you in these instructions and as your sense of loyalty may dictate.

**"Appearance in Person**—Every applicant for a license must appear in person before the licensor. In the case of firms, associations, societies and corporations desiring a license for purchasing or vending explosives, or in the case of educational institutions applying for the analyst's, investigator's, or educator's license, the application may be presented by and the license issued to the properly qualified officer of such firm, association, society, corporation, or institution, and the license shall be made out in the name of the firm, association, society, corporation, or institution; but a foreman's license shall be issued upon presentation of the application of the foreman in person and shall be issued to the foreman in person, as foreman of the designated individual, firm, association, society, or corporation. A corporation official applying for the license for a corporation and a foreman applying for a foreman's license should present proper credentials to show his official capacity. The word "foreman" as used in the regulations designates the person actually issuing explosives from the explosives magazine and any other person who may be designated by his company to see that explosives are taken by a workman only to points necessary to the carrying on of his duties and that unused explosives are returned to a safe place, whether or not this man is known at the mine or plant or carried on the pay rolls under the title of "foreman."

**"Citizenship**—The law specifies that an applicant 'shall state under oath his place of birth, whether native-born or naturalized citizen of the United States of America; if a naturalized citizen, the date and place of naturalization.' In the case of corporations, firms, and associations, the nationality of the controlling stockholders must be indicated. Licenses will not be issued to enemy aliens or to subjects of a country allied with an enemy of the United States, or to a corporation, firm, or association where its controlling stockholders or members are enemy aliens or subjects of a country allied with an enemy of the United States."

### Checking Up Retailers.

The margins charged by retail coal dealers throughout the country are being carefully checked by the Fuel Administration.



### HELPS THE MINING INDUSTRY TO KEEP UP WITH THINGS IN THE NATIONAL CAPITAL

When the issuance of an official organ of the American Mining Congress was decided upon three years ago it was apparent at once that the services of a newspaperman would be necessary. Quite to his surprise the sec-



PAUL WOOTON

retary of the Mining Congress found in the corps of Washington correspondents a newspaper man, Paul Wooton by name, who had had lengthy experience in the handling of mining news. Mr. Wooton, for eight years, had been the correspondent, in Mexico, of the Mining World. He also had the advantage of the experience which comes from the editing of a mining camp newspaper. For several years, Mr. Wooton was in charge of the Oaxaca Herald, published in the interests of the Americans engaged in mining in the Oaxaca district of Mexico. This experience was especially valuable to such a paper as the Mining Congress wished to publish.

With the exception of the editorials and certain special articles Mr. Wooton is to be credited with handling the material which makes up the JOURNAL.

In addition to his connection with THE MINING CONGRESS JOURNAL Mr. Wooton is the Washington correspondent of the Engineering and Mining Journal and Coal Age. Through THE MINING CONGRESS JOURNAL, and his other

papers, he is able to bring to the attention of an important part of the mining industry the many matters which are transpiring in the national capital. Through his efforts much is done to keep the mining industry abreast with the activities of the Government which are of special interest to mining men. It is so vital to the most effective conduct of mining enterprises to know what is being done in Washington that The American Mining Congress feels that Mr. Wooton is doing the industry a real service in playing so necessary a part in keeping it advised on matters of mining interest which develop in the capital.

### COAL PRODUCTION RUNS HIGH DURING WEEK ENDED NOV. 10

Not since early July has the production of bituminous coal reached as high a point as during the week ended November 10. The total output, including coal made into coke, is estimated at 11,300,890 net tons, an average per working day of 1,883,482 tons. This was a gain of 4.7 per cent over the preceding week, and approaches the mark of 1,902,864 tons per day set during the week ended July 14.

The large weekly output was the more remarkable in view of the fact that the week's production of beehive coke was not unusual. These facts were made public by the United States Geological Survey November 17.



J. E. CURRY

Secretary, Arizona Chapter, American Mining Congress

## PRICE OF MORE STEEL PRODUCTS IS FIXED

### President Approves an Agreement Made by the War Industries Board with the Principal Steel Industries.

The President has approved an agreement made by the War Industries Board with the principal steel industries of the United States, fixing maximum prices, subject to revision January 1, 1918, on certain steel articles, as follows:

Sheets, per 100 pounds, f. o. b. Pittsburgh—No. 28 black sheets, \$5; No. 10 blue annealed sheets, \$4.25; No. 28 galvanized sheets, \$6.25. The above prices to apply to both Bessemer and open-hearth grades.

Pipe—On  $\frac{3}{4}$ -inch to 3-inch black steel pipe, discount 52 and 5 and  $2\frac{1}{2}$  per cent, f. o. b. Pittsburgh.

Cold Rolled Steel—Seventeen per cent discount from March 15, 1915, list, f. o. b. Pittsburgh.

Scrap, f. o. b. consuming point, per gross ton—No. 1 heavy melting, \$30; cast-iron borings and machine-shop turnings, \$20; No. 1 railroad wrought, \$35.

Wire, plain wire, \$3.25 per 100 pounds, f. o. b. Pittsburgh.

Tinplate—Coke base, Bessemer and open-hearth, \$7.75 per 100 pound box, f. o. b. Pittsburgh.

In connection with the above, the iron and steel manufacturers have agreed promptly to adjust the maximum prices of all iron and steel products other than those on which prices have been agreed upon to the same general standard as those which have been announced. It is expected that this will be done promptly and consistently, in line with the basic, intermediate and finished products, for which definite maximum prices have been established.

### Releases Large Tonnage

Large quantities of coal were made available for the country's immediate fuel supply under an order issued by Fuel Administrator Harry A. Garfield November 8. The order authorizes state fuel administrators to permit the sale of coal held under contract by jobbers and wholesalers at the contract price plus the jobbers' margin as fixed by the President.

### Wyoming Accepts Penalty Clause

After a conference, held in Sheridan, Wyo., representatives of miners and operators from the northwestern field in that State agreed to accept the Washington joint agreement contract with the automatic penalty clause.

## LAW'S PENALTIES CALLED TO ATTENTION OF COKE MEN

Attention of coke producers has been called to the penalties provided by the Lever Law in an order issued by United States Fuel Administrator Harry A. Garfield. The order was a result of reports that had reached the Fuel Administration to the effect that coke producers in some instances had been selling "72-hour" coke to blast furnaces and taking advantage of the \$1 differential allowed on 72-hour selected foundry coke.

The Fuel Administrator in his order points out that any person guilty of asking, demanding or receiving higher prices than are allowed under the fuel price regulations shall upon conviction be fined not more than \$5,000 or be imprisoned not more than two years or both.

In making the order the Fuel Administrator established prices on by-product coke produced in New England. New England coke producers will be permitted to charge prices that will cover their increased transportation charges on coal carried to New England by water for use in coke manufacture. The order fixes New England coke prices as follows: "For coke produced in New England, the maximum price for each grade, f. o. b. cars at point of production, shall be the base price for the grade of coke, plus the freight rate from the competing bee-hive coke district which takes the lowest freight rate to the point where the coke is produced, and plus 7 cents for each advance of 5 cents above 60 cents in the freight charge per ton (2240 pounds) of coal for water transportation on the coal used in the manufacture of such coke. The base prices are as follows: Run of oven, \$6.00; selected foundry, \$7.00; and crushed over 1-inch size, \$6.50."

## CAUTIONS THAT SAFEGUARDS OF LABOR NOT BE BROKEN DOWN

In summing up his instructions to commanders of arsenals and to manufacturers on Government work with regard to labor, the Chief of Ordnance says, in part:

"In view of the urgent necessity for a prompt increase in the volume of production of practically every article required for the conduct of the war, vigilance is demanded of all those in any way associated with industry, lest the safeguards with which the people of this country have sought to protect labor should be unwisely and unnecessarily broken down. It is a fair assumption that, for the most part, these safeguards are the mechanisms of efficiency. Industrial history proves that reasonable hours, fair working conditions, and a proper wage scale are essential to high production. During the war every attempt should be made to conserve in every possible way all of our achievements in the way of social betterment."



## COKE PRICES ARE FIXED BY FEDERAL ORDER

**Foundry Coke May Be Sold at \$7, While a Price of \$7.30 Is Allowed for Crushed Coke.**

The following orders relative to prices for coke have been issued by the United States Fuel Administration:

"In each case the price shall be understood as the price per ton of 2,000 pounds, f. o. b. cars at the plant where coke is manufactured.

"All the maximum prices mentioned herein shall apply to car lots sold to consumers or to dealers for wagon delivery. Any commissions paid to selling agencies or margins allowed to jobbers shall be paid by the vendors, and shall not be added to the prices established hereby.

"In all cases where wagon deliveries are made, either by the coke producer or by dealers, a reasonable charge for such handling and delivery may be made. Such charge shall be subject to approval of the State Fuel Administrator.

"The maximum prices for coke made in ovens, without by-product recovery, east of the Mississippi River shall be as follows:

|                                     |        |
|-------------------------------------|--------|
| Blast furnace coke.....             | \$6.00 |
| Foundry coke, 72-hour selected..... | 7.00   |
| Crushed coke, over 1-inch size..... | 7.30   |

"The maximum prices for various grades of beehive coke, made in districts other than that described heretofore, shall bear the same ratio to the established price of the coal from which the coke is made as the average contract prices of the same grades of coke had to the average contract prices of coal during the years 1912 and 1913."

## UTAH ADMINISTRATOR GIVEN EXTENDED JURISDICTION

To insure an expeditious supply of coal for Washington, California, Oregon, Idaho, Nevada and Utah, the United States Fuel Administration has appointed W. W. Armstrong state fuel administrator of Utah to oversee distribution for those states.

Through this authority Mr. Armstrong may call upon neighboring districts in New Mexico, Colorado, Wyoming and Montana for only such per cent of their coal output as was shipped in 1916 into the states now under his supervision. Only shipments for emergency needs and not to exceed 10 per cent of the production of these districts can be obtained under his authorization.

David Whitcomb, state fuel administrator for Washington, will be authorized by State Fuel Administrator Armstrong to act for Washington coal mines.

## EXPORTS OF TINPLATE ARE RESTRICTED FURTHER

The War Trade Board, upon the recommendation of its Bureau of Imports and of the Committee on the Conservation of Tin Plate, has made two additional rulings affecting the exportation of tin plate, which are set forth below in paragraphs 3 and 4 respectively, in the following list of such rulings, which is complete to date, and includes in paragraphs 1 and 2 the rulings promulgated on October 24, 1917.

1. That no licenses will be granted for the exportation of tin plate for use for any other purpose than as food containers, except on satisfactory evidence that the plate will be used in such a way as to contribute to the military needs of the nations at war with Germany and her allies.

3. That no licenses will be granted for the port tin plate to be used as food containers, preference will be given to those cases in which satisfactory evidence is presented that the food to be packed will be for the use of the nations at war with Germany and her allies.

3. That no license will be granted for the exportation of articles (other than tin plate) containing tin, except on satisfactory evidence that the goods will be used in such a way as to contribute to the military and other vital needs of the nations at war with Germany and her allies. Preference will be given to those cases in which satisfactory evidence is presented that the goods will be used in such a way as to contribute to the production or transportation of food stuffs for the use of the nations at war with Germany and her allies.

4. That no licenses for the exportation of tin plate will be granted, except to the manufacturers of the plate, or to others who, either at the time of making application or before shipment out of the country, present satisfactory evidence that they have purchased the plate from a manufacturer on firm order from a purchaser abroad. This rule applies to pending as well as to future applications.

## Car Shortage Increases

Reports to the American Railway Association from all the railroads of the country show that on November first this year the excess of unfilled car orders amounted to 140,012 cars, an increase of 25,104 cars over the same day last year. Of this number, 97,000 cars are called for in other parts of the country than the congested region east of Chicago and north of the Potomac River where the abnormal war business is heaviest. Many of these orders for cars could be filled if the cars now delayed in the congested regions could be released. The Railroads' War Board is now applying extraordinary remedies in the endeavor to accomplish this.

## COAL PRODUCTION FOR WEEK ENDED NOV. 24 WAS 11,260,490 TONS

A slight decrease marked the production of bituminous coal during the week ended November 24. The total production of soft coal (including lignite and coal made into coke) is estimated at 11,260,490 net tons, an average per working day of 1,876,748 tons. This was 0.6 per cent less than the output during the preceding week. It is encouraging to note, however, that the week's production exceeded that of the week ended November 10 by 1.4 per cent. The bituminous production thus remains higher than at any time since early July. These facts are brought out in the weekly report prepared by C. E. Leshner, the Geological Survey's statistician.

The total production of beehive coke is estimated at 656,093 net tons, an average per working day of 109,349 tons. Anthracite shipments amounted to 42,936 cars, the highest mark attained since the week of September 1.

During the week ended November 17 representative operators produced 75.5 per cent of their combined full-time capacity, as limited by the labor force at present available. Of the 24.5 per cent of what may be termed potential production which they failed to realize for one cause or another, 19.2 per cent was reported as lost for lack of cars. Labor troubles—shortage and strikes—caused a loss of 2.6 per cent of the possible working time. Losses due to mine disability, *i. e.*, mechanical breakdowns, amounted to 2.2 per cent. Losses due to all other causes amounted to 0.2 per cent, while unspecified losses were 0.3 per cent.

Inadequate transportation thus remains the great limiting factor in the bituminous industry. The detailed figures show, in general, a shortage of cars increasingly severe over the East, North Central and Middle Atlantic States. Losses due to car shortage increased from 10.5 per cent, for the week of November 10, to 12.5 for that of November 17 in Illinois; from 5.6 to 11.5 in Indiana; from 24.6 to 27.0 in Ohio; from 21.7 to 28.0 in the Pittsburgh district, and from 10.0 to 12.7 in central Pennsylvania. An even sharper increase in the shortage of cars was reported from Kentucky, where losses due to this factor ranged from 20.3 per cent in the Hazard field to 33.7 per cent in western Kentucky. West Virginia experienced some relief in the Winding Gulf, Panhandle, and Pocahontas and New River fields, which was largely offset by the sharp rise in losses due to lack of cars in the Junior Philippi and Fairmont regions. In the latter district losses attributed to car shortage were 18.7 per cent of the present capacity for the week ended November 10 and 40.0 per cent during the following week. Conditions in the High Volatile field of southern West Virginia changed but little; losses due to car shortage here amounted to 38.9 per cent of the full-time capacity.

Working conditions in the beehive coke region of Connellsville, Greensburg and Latrobe

changed but little during the week of November 24. Losses of beehive coke due to all causes amounted to 34.4 per cent of the capacity as rated by the railroads. The operators reporting divided the losses about equally between lack of coke cars and shortage of yard labor. Shortage of mine labor and other causes were responsible for a loss of 5.2 per cent of the rated capacity. The same operators shipped 138,100 tons of coal.

## LIMITATION OF INDUSTRY MAY BE NECESSARY, DR. GARFIELD SAYS

"If voluntary economy on the part of industrial and domestic consumers, added to the increased coal production of 1917, which will reach a total of over 50,000,000 tons, does not provide fuel enough for the war and to keep our people warm, there will come a time when some limitation will have to be imposed upon manufacturers of non-war products," says Dr. Garfield, of the Fuel Administration. "In such an event the business world may feel sure that all the bearings of such limitations will be given thorough consideration, and that the necessary coal will be obtained with the least possible interference with industry."

"Arbitrary limitation is a last resort, and to be avoided if possible. In many cases industrial concerns have already begun a voluntary curtailment of their use of coal. Such efforts will receive the fullest support and encouragement of the Fuel Administration, including technical advice on the use of fuel. The important point for everyone to remember is that if coal is now consumed in the old 'peace-time' way the supply will fall 50,000,000 tons short of necessary requirements, in spite of the large increase in production. As I have stated before, the Fuel Administration is determined that sufficient coal for the war, for public utilities and for domestic consumers shall be provided."

"The way to prevent those losses incident upon limitation of industry is for every consumer of coal to cut off waste and unnecessary consumption with an iron hand to start on this intensive course of conservation without a moment's delay."

## B. G. Hinckley to Aid L. A. Snead

B. G. Hinckley, of Boston, Mass., has been named to assist L. A. Snead, of the Apportionment and Distribution Section of the United States Fuel Administration, in all matters relating to the supply of coal and coke for New England.

Fuel conditions in the New England States have been under discussion by representatives of the Fuel Administration, and J. J. Storrow, Fuel Administrator for New England. With the closing of navigation on the Great Lakes, the Fuel Administration promised to have special shipments of coal made to New England.



### GALLINGER RESOLUTION PRESAGES FIGHT ON THE TARIFF

That the present session of Congress will see a fight on the tariff is doubted by none. Senator Jacob H. Gallinger, of New Hampshire, the Republican leader, has given opportunity for the fight to start by introducing a resolution in which it is said that the present rate of duties is about 8 per cent, the lowest in the history of the country, and utterly fails to protect either American industry or American labor.

In the ten-months period preceding commencement of the European war the duty rate reduced the balance of trade of the United States by \$260,866,122, a reduction of approximately 43 per cent, the resolution states. It goes on to point out that in the fiscal year 1917 imports were \$850,000,000 greater than in the year before the war began but that the revenue derived from 1917's imports was \$92,000,000 less than in 1913.

Anticipating after-war conditions, the resolution concludes "that in view of existing conditions, as well as in anticipation of the industrial conditions that will necessarily exist at the close of the war in which we are engaged, it is the duty of the Congress of the United States, without delay or hesitation, to place on the statute books a law that will protect all classes of our people, and especially the laboring and agricultural classes, from the disastrous effects of an inundation of foreign-made goods and products."

### CAR SHORTAGE CUTS INTO PITTSBURGH DISTRICT'S OUTPUT

Car shortage in the Pittsburgh coal fields reduced output 39,600 tons in one day according to telegraphic advices received by the National Coal Association. Two coal associations in Illinois also reported that shortage of cars reduced their output to 9,000 tons.

The situation in these districts is typical of that which prevails virtually throughout the entire country, making it impossible for the bituminous coal operators even to approximate the heavy war time demand for coal.

If sufficient cars had been furnished to mines in these three fields for the one day, nearly 50,000 tons of coal which at present remains in the ground, would be available for industrial and domestic needs.

In the Pittsburgh district, eighteen large mines, with an output of 20,700 tons, did not turn a wheel because of lack of cars, and thirty-nine mines, with 50,000 ton daily capacity, worked only part time.

Conditions were reported as "not improving." The National Coal Association, to which these reports were made, announced that so long as the railroads continue in their failure to supply cars to the mines, there is little prospect of meeting the demand for bituminous coal.

### GARFIELD THREATENS TO TAKE OVER MICHIGAN COAL MINES

If Michigan coal operators refuse to ship coal in accordance with prices fixed by the State Fuel Administrator under authority of the United States Fuel Administration the Government will take possession of the mines and operate them.

This was announced in a telegram sent by United States Fuel Administration Harry A. Garfield to W. K. Prudden, Federal Fuel Administrator for Michigan. The telegram was sent following a conference between the United States Fuel Administrator and John A. Hicks, of St. Johns, Mich, a member of the advisory commission of the State fuel administration during which Dr. Garfield was informed that some of the Michigan operators were indicating their purpose to refuse to supply coal as ordered at prices fixed by the Government.

The telegram from United States Fuel Administrator Garfield concerning the Michigan situation was as follows:

"W. K. Prudden, Federal Fuel Administrator, Lansing, Mich.

"If Michigan operators refuse to ship in accordance with prices fixed by you under my authority, I will take possession of mines. Serve notice to this effect, if necessary, prefacing same by statement that action is by order of the United States Fuel Administrator."

### WITH PRIORITY REMOVED EAST TO GET MORE COAL

Shipments of coal to lake ports for transshipment to the Northwest were ordered suspended at the close of business November 30, under a ruling issued by Fuel Administrator Garfield. The order suspending lake shipments became effective simultaneously with the cancellation of the Lake Priority Order, which gave preference to railroad shipments of coal for lake ports.

At the request of Fuel Administrator Garfield, Priority Director R. S. Lovett ordered the Lake Priority Order cancelled at the close of business on November 30. With the Priority Order removed the coal produced in the mines shipping to lake ports will be directed to sections of the East and central West where war industries, public utilities and domestic consumers are in need of fuel.

### Asks that the Natural Ice Be Garnered.

A great harvest of natural ice is proposed by the United States Fuel Administration as a means of saving coal this winter. Fifteen million tons of coal are used annually in American ice factories and refrigerating plants.

## NEW MINES ALLOWED PROFIT OF 15 CENTS A TON

### Regulations Issued Covering Mines Opened Before September 1, 1916, and Which Will be Ready to Produce Coal Before January 1, 1918

Regulations for the operation of new coal mines opened before September 1, 1916, and ready to produce coal on or before January 1, 1918, were announced November 23 by United States Fuel Administrator Harry A. Garfield.

Mines in this class will be operated under the direct supervision and control of the United States Fuel Administration. Such mines will be allowed to charge prices which will cover their producing cost and a profit of 15 cents per ton. This profit will be allowed only after each mining operation in this class has been developed to a point where its daily shipments are 250 tons. The regulations as issued read:

"Regulations affecting mining operations begun not later than September 1, 1916, and ready to produce coal on or before January 1, 1918:

"Operators owning or controlling a mine falling within this category may sell coal produced from said mine on orders or under contracts approved by the United States Fuel Administrator at cost plus the profit specified in paragraph No. 6 below, and subject to the following provisions:

"1. The quality of the coal produced and the mining conditions and equipment must be acceptable to the United States Fuel Administrator.

"2. Deliveries of coal, whether on orders or under contract, may not be extended beyond January 1, 1919.

"3. Monthly cost statements shall be submitted to the United States Fuel Administrator in such detail as may be prescribed by him.

"4. The only elements which shall enter into the cost shall be the actual cost of mining, transporting, hoisting and loading coal, to which shall be added only a fair proportion, not to exceed one-half ( $\frac{1}{2}$ ) of the cost of mine management and maintenance.

"5. Contracts for the sale of coal shall contain an express provision that the Government prices for coal, f. o. b. mines, in the district in which said mine is located, may be substituted for the contract prices herein provided for, upon thirty days' notice to the parties concerned by the United States Fuel Administrator.

"6. In addition to the costs provided for in paragraph No. 3 above, an amount may be added for profit on the following basis:

"Fifteen cents per ton when the daily shipments are 250 tons or more; that is to say, until the daily shipments are 250 tons no amount is to be added for profit."

## ALL SHIPMENTS ORDERED THROUGH TIDEWATER EXCHANGE

The Tidewater Coal Exchange was formally approved November 7 by the United States Fuel Administration, and an order was issued requiring all transshippers of coal at New York, Philadelphia, Baltimore and Hampton Roads to make shipments through that exchange. The exchange was organized some time ago, and practically all shippers to these points have been handling and making shipments through the exchange, a few shippers remaining outside, which interfered with the successful operation of the exchange, in that 100 per cent efficiency could not be obtained unless all shippers were members and handled the coal through this medium.

The order will result in all shipments through the medium of exchange, and it is estimated will result in increased production of approximately 10,000,000 tons per year, on account of the decrease in detention of cars at the ports, and, therefore, an increased car supply to the mines.

The exchange will also serve another purpose, in that through this agency there will be available at the ports at all times sufficient coal for emergency purposes for the army and navy requirements.

The coals are pooled and classified according to grades, and the number of consignees has been reduced from 1,000 to 50. Vessels have also been pooled at some of the ports, and this, together with arrangements for bunkering in the stream, will accomplish quick unloading of the cars, and, therefore, facilitate the loading of the vessels, resulting in the greatest efficiency of handling coal at the ports so necessary to this emergency.

### Fixes Prices at Docks

The Fuel Administrator has announced prices, at which various grades of coal shipped to the docks located on Lake Michigan and Lake Superior, may be sold. These docks are not included in the category of jobbers, nor of retailers and hence the rules heretofore promulgated do not apply, except to a small proportion of retail business done at the docks for the accommodation of local consumers which falls under the order of October 1, as retailers' margins.

Guardian Casualty and Guaranty Company has withdrawn from the underwriting field so far as the acceptance of new business is concerned. The officers of the company are W. S. McCormick, Senator Reed Smoot, L. V. McCormick, Thomas W. Sloan, George E. Cutler, and Senator William H. King. The Guardian Company has for a number of years given its hearty support to the work of the American Mining Congress.



# THE WEBB-POMERENE BILL

By O. K. DAVIS

*Secretary of the National Foreign Trade Council*

The so-called Webb-Pomerene bill to promote foreign trade, which is pending in the United States Senate as the unfinished business, and which will come up for action automatically upon the opening of the new session, is an effort to give concrete legislative expression to the recommendation of the Federal Trade Commission, of President Wilson, the members of his Cabinet, and of chambers of commerce, boards of trade and trade organizations, as well as firms and individuals connected with foreign trade, and all those generally who are interested in America's commercial development, in favor of equipping our commercial machinery with some of the same means of doing business which have been enjoyed for so long by our foreign competitors. The American business legal system fills the place of chief importance with an effort to enforce competition. It has been the contention of many of our economists and lawmakers for a long period that practically all the evils of avarice and abuses made possible by the gathering together of large capital in one organization could be checked effectively or prevented by this enforced competition. So strong and so general has been the devotion to this principle, especially among the lawmakers of the United States, that it has been held to apply to organizations effected solely for overseas trade. Thus our overseas traders, while realizing keenly the disadvantage of being compelled to compete with foreigners who are not only permitted but are often directly encouraged by their governments to combine for export trade, feel themselves restricted by the American legal system even from organizing joint selling agencies to operate wholly outside of American jurisdiction.

The Webb-Pomerene law will relieve our exporters from this uncertainty and permit them to equip themselves with some of the machinery now so effectively employed by their competitors. It is of first importance that they should have this privilege and opportunity. The one thing certain for the period after the war is that international competition will be extraordinarily keen. The reserve stocks of all the world have been exhausted. Everywhere shelves are bare; everywhere new supplies are in increasing demand. The great industrial nations of Europe, especially Germany, Great Britain and France, are giving profound study and careful thought to preparation for this competition. Their parliaments and their governments have joined hands in seeking to improve the machinery for their foreign trade. Only in the United States is there any lagging back, and here it is appar-

ent only in Congress in the delay in enacting the Webb-Pomerene bill.

This bill passed the House of Representatives on September 2, 1916, by a nonpartisan vote of 199 to 24. Attempt to secure prompt action in the Senate was defeated through the opposition of a small group, who have since signalized their attitude by opposition to a considerable number of the measures brought forward by the Administration as essential to the maintenance of American rights and to the successful prosecution of the war.

The effort to pass the bill in the Senate was renewed at the short winter session. There again the tactics of the opposition were successful in postponing action until the session expired by constitutional limitation on March 4.

When the special war session of Congress opened, in response to the President's call on April 2, the President made it clear that his support of the Webb-Pomerene bill was as hearty as ever, and very early in the session Mr. Webb, chairman of the Judiciary Committee, reintroduced the bill in the House and Senator Pomerene reintroduced it in the Senate. On June 13 Mr. Webb called the bill up in the House, and it was passed by a vote of 241 to 29. On different occasions during the session Senator Pomerene made efforts to secure action on it in the Senate, and each time it met again the old opposition. A careful canvass of the Senate has disclosed the fact that at least two-thirds of the Senators are favorably disposed to the bill and will vote for it when it is brought to the stage of final action. Only a very small number of Senators have declared themselves against the bill. It is singularly significant that their opposition has served to prevent the adoption of a measure which will place American exporters on an equal footing with their German competitors. It is not too much to say that of all trade rivals the Germans most fear the equipment of American business with this facility for export trade. The end of the war will see German export effort concentrated as never before, and unless the Webb-Pomerene bill is enacted American foreign traders will surely be obliged, single handed, to meet combinations not only permitted but in some cases actually organized by directors of the German government.

The Webb bill as the unfinished business is in a position of advantage in the Senate. It ought to be forced to a vote promptly and passed, so as to enable our exporters to begin perfecting their organizations for foreign trade.

## CHAMBER OF COMMERCE OF U. S. UNDERTAKES ACTIVE WAR WORK

A call has been issued by the Chamber of Commerce of the United States for a meeting in Washington, December 12, of the chairmen of war service committees representative of every industry in the country.

They will come to the Capital primarily to perfect plans for cooperation with the Government. This will develop discussion of many of the vital problems with which wartime industry is confronted—of priorities in transportation, the readjustment of industries to meet war demands, and the like.

The industrial mobilization which will center here next week is in pursuance of a resolution, adopted at the recent War Convention of American Business held at Atlantic City, which called upon the industries in their own behalf, and in order to render the most efficient service to the Government to organize war service committees which should, in each case, be fully representative of the entire industry. An official statement on behalf of the Council of National Defense of the need for such action is contained in the following letter from Director Gifford to Secretary Goodwin, of the National Chamber:

"With reference to the letter of the 16th ultimo from Mr. Waddill Catchings, secretary of the National Chamber's Committee on Cooperation with the Council of National Defense, addressed to the War Industries Board, I beg to assure you of the appreciation of this office and of the Council of National Defense of the steps taken by the Chamber of Commerce of the United States in the organization of War Service Committees. We feel that the establishment of representative committees, formed in such manner as to entitle them to speak for their entire industries, will render immediately available valuable sources of information upon which the Government may draw in connection with the countless business and industrial problems attendant upon the conduct of the war.

"For your information in this connection I will add that the several committees appointed by the Council of National Defense and by the Advisory Commission have, in each instance, tendered their resignations, and, in order to prevent a continuance of the embarrassing situation wherein members of the committees were called upon to act both as Government agents or advisers, and, at the same time, as representatives of their respective industries, that these resignations have been accepted. For the purpose of furthering the valuable work instituted by the Government committees, however, it is most desirable that representative committees of the industries be formed by the industries themselves at the earliest possible moment."

A large number of organizations have already completed the appointment of their war service committees, and many have already established offices in Washington. The meeting at the Capital will be for the purpose of developing definite plans for the industries'

representatives, and, in general, to aid in the work which they will be called upon to undertake.

The National Chamber resolution, calling upon the industries of the country to mobilize, asked that their committees be "made up of representative men in the industry, whether or not they be members of existing organizations," and further recommended that in all matters pertaining to any given industry the Government should deal with this group wherever possible, leaving to it where practical the proper distribution of all orders for material.

## COUNCIL OF NATIONAL DEFENSE TO PROBE NATION'S LABOR NEEDS

As the demands of the Government for more supplies of all sorts have increased there have arisen in various departments a considerable number of problems relative to proper adjustment of labor supply to the war needs.

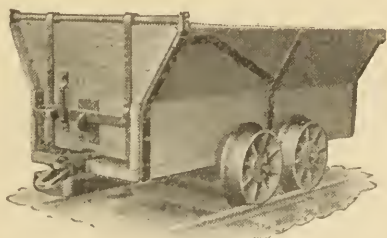
In order to secure a basis of facts on which to work out policies, the Council of National Defense has authorized the director to undertake the following work:

1. To determine present and probable future demands for labor in war industries.
2. To determine in connection with the Priorities Committee of the War Industries Board the relative priorities of the labor demand.
3. To arrange for the supplying of the demand through the Department of Labor or such other Governmental or civilian agencies as can best meet the demand.
4. To determine the needs for dilution of labor, including the introduction of women into industry, and recommend policies to be followed in regard thereto.

This work, under the Council, has been put under the immediate charge of L. C. Marshall, who is designated Chief of the Section on Industrial Service. Mr. Marshall comes to this work from the deanship of the School of Commerce and Administration of the University of Chicago. He has given his time recently to the special consideration of labor matters as affecting certain procurement divisions of the War Department, and thus takes up the new work with broad general information and special detailed knowledge of a number of the more pressing problems.

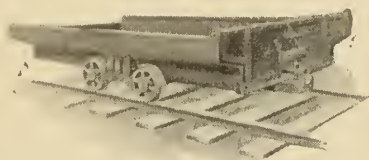
It is not contemplated that there will be created under the Council any agencies for executive action with respect to the problems concerned. The purpose is to have under the Council a section to which these various labor problems may be brought for common consideration. The new Section will work in close cooperation with the War Industries Board and its Priorities Committee, and will, like the War Industries Board, bring to the Council digested information from all Government Departments as to the above subjects. Policies then will be worked out to secure the most efficient utilization of existing agencies and to facilitate the development of such new agencies as may be necessary.





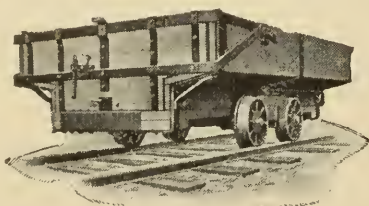
No. 303

# TWO BIG LOADS COAL AND WORRY



No. 81

Now is the time when your cars must not fail you—“*You worry for fear of a break down.*”



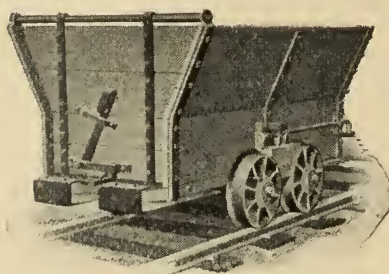
No. 78

If your cars are Watt Cars you can rest assured they are designed to stand the strain required of them.

They carry two loads—your coal and worry. May we design you a two-load car?

*Remember—*

that our plant is the largest in the world devoted exclusively to the manufacture of mining and industrial cars.



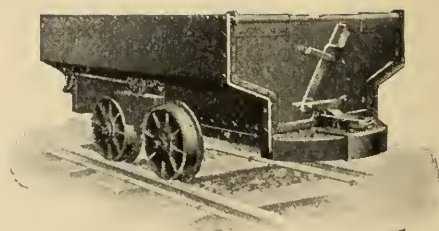
No. 435

*YOUR BIT—*

To produce the coal.

*OUR BIT—*

To furnish you with reliable cars and insure your production.



No. 170

*Catalogue on request*

**The Watt Mining Car Wheel Co.**  
Barnesville, Ohio, U. S. A.



No. 458

## SMOKELESS OPERATORS WANT AN INCREASE IN PRICE SCALE

Central Pennsylvania producers of smokeless coal, the demand for which in naval operations and for city and industrial uses far exceeds the supply, petitioned Fuel Administrator Garfield November 8, for a revision of prices fixed by the Government. Continuance of the present scale, the operators told Dr. Garfield, is certain to cause great loss to the producers and force the closing of many mines.

The operators, through the Low Volatile Coal Producers Association of Pennsylvania, presented cost sheets and other data in support of their petition. Shortage of cars recently has contributed to the rising cost of production as the operators, desiring to produce a capacity output, have paid their men full time, although operating on a part time basis, in order to hold them.

Veins in the low volatile coal fields are more difficult and more costly to work as they average only three and one-half feet in thickness and, in some instances, are no thicker than two feet, eight inches. The coal is of superior quality and is used for steaming purposes chiefly for steamships, battleships, transports, public utilities and city use.

"We feel," reads the operators' petition, "that production of this high-grade coal should be stimulated in the interest of national service, but we believe that the President's provisional price is not only too low to accomplish that purpose, but will cause great loss to the producers and force the closing of many mines unless the price is raised."

### Wants More Wood Used

The United States Fuel Administration, in cooperation with the Department of Agriculture, has inaugurated an intensive campaign for the substitution of wood for coal. The action is taken as a means of conserving the coal supply, and experts from the Fuel Administration estimate that the utilization of the nation's vast available wood supply would go far toward meeting the shortages of 50,000,000 tons in the nation's coal supply.

### Finds No Shortage.

The Federal Trade Commission's agent, Raymond Richards, assisting the state fuel administrators of Missouri, Kansas and Nebraska, states that the press, the public and the coal dealers in Kansas City complain that there has been a shortage of coal there.

Mr. Richards has collected detailed information which shows that the quantity of coal delivered by retail dealers in Kansas City during the period May 1 to November 1, 1917, was 32 per cent greater than the quantity of coal delivered in the corresponding period of 1916.

## PERSONALS

S. W. Traylor, president of the Traylor Engineering and Manufacturing Company, has erected a modern fireproof hotel at Allentown. J. Lawrence Duling, formerly of the Imperial Hotel, New York City, is manager.

Beach & Co., of Denver, Colo., have made an arrangement to represent a Chinese company who will ship tungsten ore from China, to be milled by the Rare Metals Ore Company, at Rollinsville, Colo.

T. L. Lewis, of Charleston, W. Va., stopped in Washington last month, on his way to New York City, where he attended the directors meeting of the American Mining Congress.

Andrew McCormick of the M. McCormick Company, Stockton, Cal., was in Denver recently to purchase ore milling equipment for a mill that he is remodeling on one of his mining properties near Jacksonville, Cal. He placed his order with the Denver Quartz Mill & Crusher Co. for a car load of machinery included in which was a No. 2 Denver Quartz Mill.

W. H. Huff, of Denver, Colo., spent several days in Washington last month.

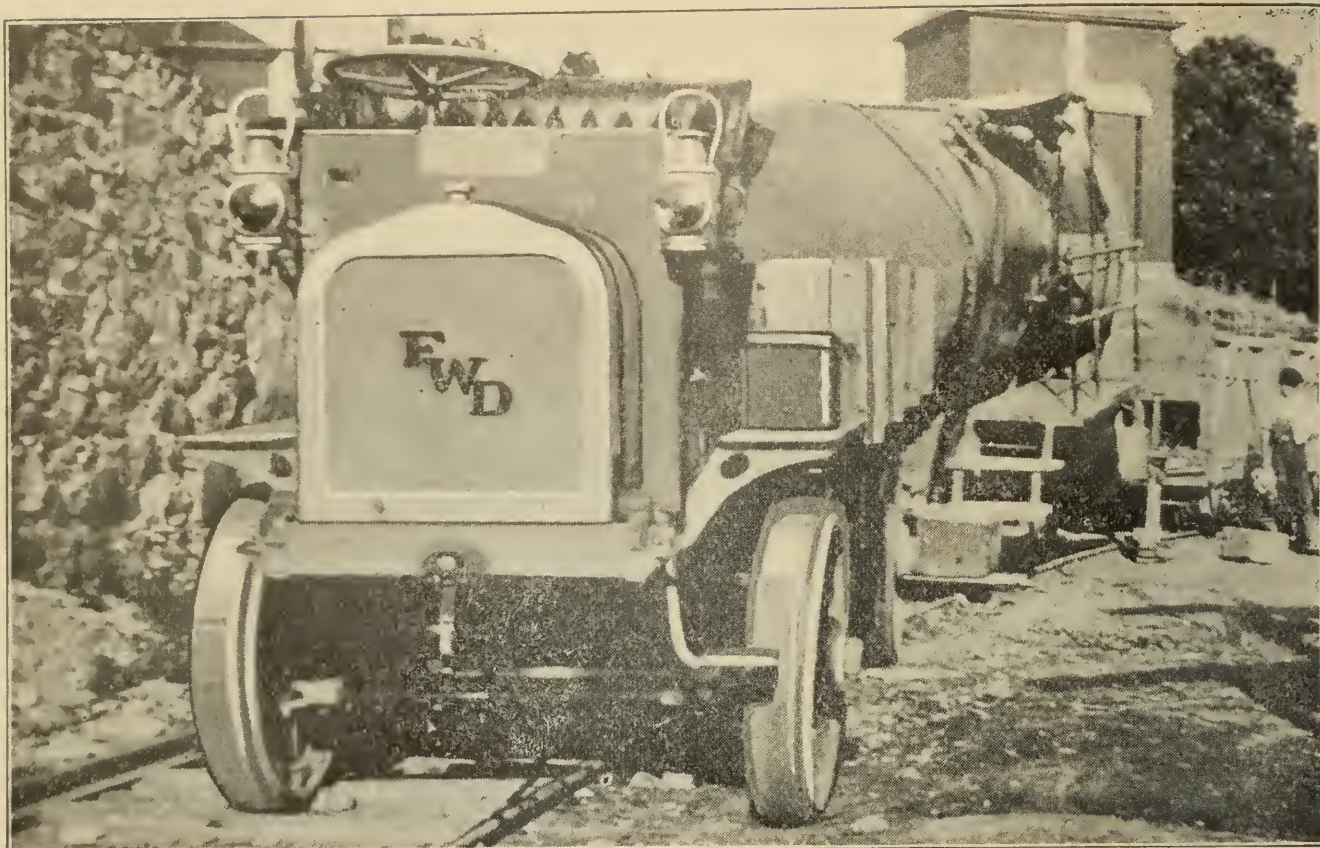
M. R. Meyer, representing the Durham Fuel & Iron Co., of Chattanooga, Tenn., and Mr. Lynch, representing labor in the Chattanooga district, spent several days in Washington last month, in conference with the Fuel Administration.

A. G. Mackenzie of Salt Lake City, secretary of the Utah Chapter of the American Mining Congress, included Washington in an extended trip last month, which covered Denver, Atlanta, Ga., Washington and New York City. Mr. Mackenzie spent several days in the national capital, renewing acquaintances with prominent Salt Lake men, now on duty at the capital, and in looking after the lead situation, which is giving Utah producers considerable concern. Mr. Mackenzie is responsible for a particularly live and efficient mining organization in Utah. Upon his return trip, he will stop in Denver, where he will address a meeting of the prominent mining men of Colorado, who are organizing a State Chapter in Colorado similar to that in Utah.

### Electric Sign Display Restricted.

The use of coal in the production of electricity for nonessential purposes was curtailed throughout the United States in an order issued November 9 by Fuel Administrator Garfield.





## Power in Four Wheels Hauls Big Loads

**FWD  
TRUCKS**

**T**RACTION in four wheels—every wheel a driving wheel gives great efficiency in hauling trailers.

Even on stiff grades or rough roads F-W-D Trucks are able to pull many times their own load capacity in trailers.

F-W-D Trucks are used in this manner extensively in the mining industry and have demonstrated great Dependability and Economy.

The F-W-D Catalog explains clearly the exclusive application of the four-wheel-drive principle and how it develops *useful power* and contributes to the life of the truck. This catalog sent on request.

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